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New York Economic Handbook 2007

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*Faculty and staff in the Department of Applied Economics and Management, Cornell University.

This publication contains information pertaining to the general economic situation and New York agriculture. It is prepared primarily for use by professional agricultural workers in New York State. USDA reports provide current reference material pertaining to the nation's agricultural situation. Many of these reports are available on the internet. Click on "Newsroom" at the following website: *http://www.usda.gov/wps/portal/usdahome*

The chapters in this handbook are available in PDF format on the Applied Economics and Management outreach website: *http://aem.cornell.edu/outreach/publications.htm*

Chapter 1. Websites for Economic Information and Commentary

Steven C. Kyle, Associate Professor

1. http://rfe.org *Resources for Economists*
   This American Economics Association website has an encyclopedic list of all sorts of web-based economics sites.

2. http://www.economagic.com/ *Economagic -- Economic Times Series Page*
   Economagic is an excellent site for all kinds of U.S. economic data, including national income accounts, the Federal Reserve, the Bureau of Labor Statistics and more. The site includes a very useful graphing function and allows downloads to excel worksheets as well as simple statistical functions.

3. http://www.econstats.com/ *Economic Statistics*
   EconStats is another site with links to all kinds of US data. It also has links to data for many other countries.

4. http://www.whitehouse.gov/fsbr/esbr.html *Economics Statistics Briefing Room*
   This is the White House site for overall economics statistics. This also includes links to other parts of the government.

5. http://www.cbpp.org/index.html *Center on Budget and Policy Priorities*
   The Center on Budget and Policy Priorities is a non-partisan web site that focuses on economic policies related to the budget and their effects on low- and moderate-income people.

6. http://www.argmax.com/ *ArgMax*
   This is an excellent site for economic news, data links and analysis.

7. http://www.econlib.org/ *Library of Economics and Liberty*
   The Library of Economics and Liberty web site features articles and links to many books and other economics related resources.

8. http://cf.heritage.org/budget/cbo/BudgetTreeStart.cfm *Heritage Foundation*
   The Heritage Foundation comments on economic policy from a conservative viewpoint. This link takes you to a very useful federal budget calculator that will help you understand what the federal government spends its money on and where they get the money from.

9. http://www.kowaldesign.com/budget/ *Budget Explorer*
   This site contains a budget explorer which I like because it allows you not only to calculate your own budget but also links to the various executive branch departments with spending authority, so you can see exactly where the money is going.

10. http://www.concordcoalition.org/ *The Concord Coalition*
    The Concord Coalition is a non-partisan group advocating a balanced budget. Their site contains very useful graphs and projections showing what current taxing and spending proposals mean for the federal budget in the years ahead.

11. http://www.economy.com/dismal/ *The Dismal Scientist*
    This is a very good web site for evaluations of current statistics and policy.

12. http://www.federalbudget.com/ *National Debt Awareness Center*
    The National Debt Awareness Center has a useful graph providing up to date information on the size of the national debt and what the Federal Government is spending money on.

13. http://www.ombwatch.org/ *OMB Watch*
    OMB Watch is another web site devoted to information on what is happening to the federal budget. Click on http://w3.access.gpo.gov/usbudget/fy2004/maindown.html to link to OMB's own presentation of the 2004 budget.

14. http://www.brook.edu/default.htm *The Brookings Institution*
    The Brookings Institution publishes lots of good articles on current economic and political policy.

15. http://www.realtor.org *National Assoc. of Realtors*
    Check this site if you want information on real estate.

16. http://www.census.gov/ *U.S. Census Bureau*
    The U.S. Census Bureau web site provides demographic and population numbers.

17. http://www.briefing.com/FreeServices/ *Briefing.com*
    For a more in-depth analysis of stock and bond markets and the factors that influence them, check out Briefing.com.

18. http://www.imf.org/ *International Monetary Fund*
    The International Monetary Fund is an excellent site for data on all member countries, with a particular emphasis on balance of payments, exchange rate and financial/monetary data.

19. http://www.worldbank.org/worldbank.htm *The World Bank Group*
    The World Bank has cross country data on a wide variety of subjects.

20. http://www.undp.org/ *United Nations Development Programme*
    The UNDP has cross country data with a particular focus on measures of human welfare and poverty.

21. http://www.fao.org/ *Food and Agriculture Organization of the UN*
    The Food and Agriculture Organization of the UN has cross country information on food and agriculture.

22. http://datacentre2.chass.utoronto.ca/pwt/ *Penn World Tables*
    The Penn World Tables are a useful source for a variety of economic data series not available from other sources.

23. http://www.bls.gov/fls/ *U.S. Department of Labor, Foreign Labor Statistics*
    The Foreign Labor Statistics program provides international comparisons of hourly compensation costs; productivity and unit labor costs; labor force, employment and unemployment rates; and consumer prices. The comparisons relate primarily to the major industrial countries, but other countries are included in certain measures.

24. http://www.kyle.aem.cornell.edu/ *Professor Kyle's Web Site*
    Visit my web site for information about me, material contained in this chapter, and my work in the area of economic policy.

Chapter 2. The Marketing System

Kristen S. Park, Extension Associate

Special Topic—The "Local" Story

""Locally grown" is the hottest trend in food right now among consumers concerned with reducing fuel and pollution generated by moving food all over the world, and with keeping farms in their communities," Carol Ness, Chronicle Staff Writer, San Francisco Chronicle, Wednesday, July 26, 2006

"Local" has been on the move for a while now, but it has recently been strengthened 1) by the increase in fuel prices and 2) as somewhat of a backlash against major retailers' moves into organics. Advocates of supporting local small and medium size farms in rural areas have found solace in organic agriculture. And for many years "organic" has been a term which also provided a sense of local agriculture. But this past spring Wal-Mart made its announcement to increase their offerings of organic products by 100%. Concerns about meeting this with already rising demand from retailers such as Whole Foods include concerns about pressures on production which would weaken organic standards and also lead to imports of organics from foreign countries. In addition, whether true or not, the latest food safety scare with spinach has resulted in many consumers looking harder at organics and looking more to "local". They feel more confident, and perhaps more in control, in knowing that their food was grown by a farmer they know. Is it now time for "local" to experience the next boom (or boon) to smaller-scale agriculture?

In November, Cornell Cooperative Extension hosted its "Strategic Marketing Conference" in the heart of food country-right down the road from the Culinary Institute of America in Hyde Park, NY. The conference supported panels of speakers from agriculture, retailing, and food service. The word from the buyers was that "local" is in demand, and they can't find enough of it.

Demand from food service is primarily from white table cloth restaurants looking for means to differentiate their business. Chefs have found "local" to be synonymous with higher quality in terms of freshness and shrink. It also provides the story to engage customers who want their restaurant to provide stimulating entertainment and conversation as well as a quality meal. According to Dan Barber, owner and chef at the Blue Hill and the Blue Hill at Stonebarn restaurants, the greatest trend is in pasture-raised be it pigs, chickens, sheep, lamps, or ducks. "The quality difference for chefs is unbelievable," and "Grass based system is the future for meats."

Is there is good story for vegetables as there is for meats? Barber said that every chef hears [from producers] that the Northeast is the worst growing region in the US. Yet, he stated that he gets the best and sweetest root vegetables here, around the autumn/winter season after the freeze. Barber's ending comment was to know what is possible to produce here, to capitalize on regional tastes, and to provide a story about you and your farm to the consumer.

Demand from retail can come from local independent food retailers or even from regional and national chains. Wendy Carter, Locally Grown Coordinator for the supermarket chain Hannaford says, "Hannaford is passionate about supporting local community and supporting the farmer." When the customer knows they have locally-grown product, they can't keep it in the store! Their challenge is letting the customer know it is there. Her advice for farmers looking to start selling to a retailer, which was echoed by the other panelists, was to always start conversations at the store manager level and in the winter so both parties can start plans for the marketing season. Hannaford encourages produce managers to value long-term

relationships. This also means that they do not want the store manager to not buy random truckloads for the spot buy.

Adams Fairacre Farms, a 3-store retailer in the Hudson Valley, does $100 million annually with produce being the single largest department. Being a local business they like to sell local farm products. They have greatest demand for lamb, beef, and cheeses. Their challenge is finding farm product. Farmers in the region are drawn to the Greenmarkets in NYC, and do not generally have enough product for the retailer. While they have relationships with local apples and sweet corn, they are trying to find ways to work with farmers to get product. One way is to let their Ulster County store serve as a drop-off point for farmers while they provide their own inter-store trucks to transport product to the other stores.

The comments by these buyers at the conference were encouraging. Even nationally, “local” is on the move. Whole Foods, the recent supermarket marvel growing at levels unheard of in food retailing, has said that it plans to buy more from smaller growers. In addition, it recently announced 5 initiatives to support local agriculture. Whole Foods plans to:

- Give $10 million a year in low-interest loans to help small, local farmers and producers of grass-fed and humanely raised meat, poultry and dairy animals. Select Regional and Store Buyers will be empowered to extend these loans to help support smaller scale agricultural entrepreneurs.
- Raise its standards of humane care for the animals who supply meat, eggs and dairy to the stores. Whole Foods has hired an "animal compassionate field buyer" to work with producers to ensure that they meet the standards.
- Set up Sunday farmers' markets in the parking lots of some Whole Foods stores.
- Whole Foods Market is changing the job responsibilities of our Regional Buyers to focus more on sourcing local products for their stores.
- Give Regional and Store Marketing Teams direct responsibility for communicating and educating our customers about locally produced products to tell the stories of local producers.

While Whole Foods is only 1 retailer, albeit with 189 stores, it is in the competitive spotlight and you can be sure that other retailers are taking note of its actions.

The U.S. Food Marketing System Update

Food and beverage sales grew nicely in 2005, increasing $66 billion from 2004 to a total of $1.1 trillion (Table 2 – 1). Growth paced approximately 6.0% for total food and beverage sales as well as for all subcategories. Food-at-home sales as well as food-away-from-home sales grew 5.9% and 6.0% respectively. Food and beverage sales fed approximately 300 million Americans, as the U.S. Census announced in October that U.S. had reached the mile mark with an estimated 300 million residents living in the country.

TABLE 2 – 1. FOOD SALES[1]

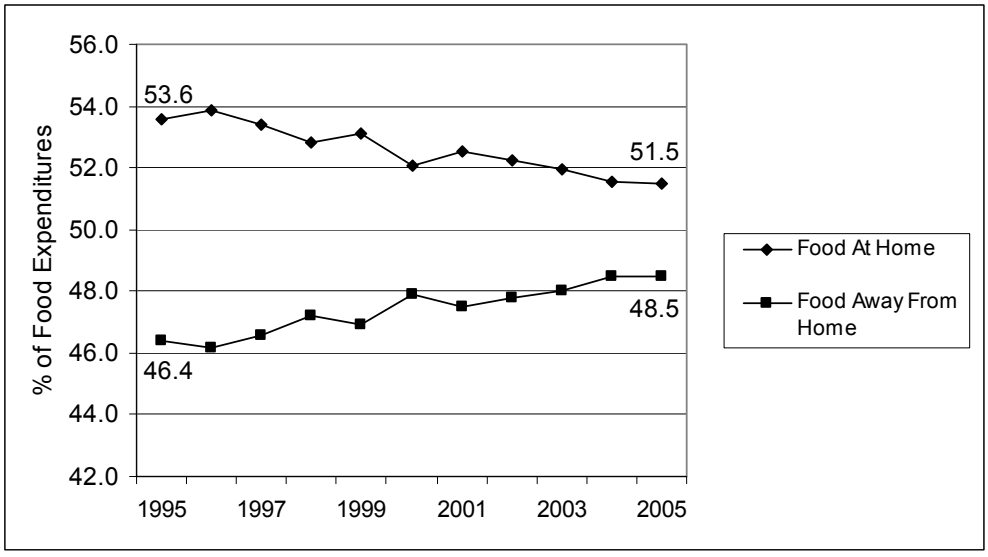
Sector	Sales 2004	Sales 2005	Increase	Growth
	--$ billion--		--$ billion--	--% change--
Total food and beverage sales	1,039,909	1,105,910	66,001	6.0
Total food sales (excluding alcohol)	915,616	973,658	58,042	6.0
Food at home sales	489,520	520,319	30,799	5.9
Food away from home sales	426,096	453,339	27,243	6.0
Alcoholic beverage sales	124,293	132,252	7,959	6.0

[1] Does not include home production, donation, or school lunch program expenditures

Source: USDA-ERS, http://www.ers.usda.gov/briefing/CPIFoodAndExpenditures/Data/table1.htm, last updated: June 8, 2006.

The USDA Economic Research Service calculates expenditures beyond dollar sales. When all food consumption expenditures are estimated, including food produced at home (at-home consumption) and school lunch programs and other child nutrition subsidies (away-from-home consumption), at-home food expenditures are approximately 51.5% of all food expenditures (Figure 2 – 1). This figure held steady from 2004. Food expenditures away from home are estimated to be 48.5% of total food expenditures. Numbers from USDA have been updated and revised since last year when they reported that away-from-home expenditures were greater than at-home expenditures.

FIGURE 2 – 1. PERCENT OF TOTAL CONSUMER FOOD EXPENDITURES, AT HOME AND AWAY FROM HOME



Source: USDA-ERS, http://www.ers.usda.gov/briefing/CPIFoodAndExpenditures/Data/table1.htm, last updated: June 8, 2006.

Food-away-from-home expenditures are catching up to food-at-home expenditures, although it did not reflect this in 2005. The increase is not only due to an increase in volume of consumption—more consumers eating out more often—but also in a slight increase in restaurant prices relative to retail (at-home) prices. Table 2 – 2 illustrates this slight trend for increasing restaurant prices relative to retail prices.

TABLE 2 – 2. RELATIVE PRICES OF FOOD AT THREE STAGES OF THE SYSTEM

Year	Restaurant prices	Retail store prices	Manufacturers' and shippers' prices
	Percent of retail store prices		
1995	172.9	100.0	54.2
1996	170.9	100.0	54.1
1997	171.5	100.0	52.3
1998	172.7	100.0	51.1
1999	173.7	100.0	50.4
2000	173.8	100.0	50.0
2001	173.2	100.0	49.8
2002	175.4	100.0	48.5
2003	175.3	100.0	49.5
2004	173.9	100.0	49.5
2005	176.0	100.0	49.3

Source: USDA-ERS, CPI, Food and Expenditures, http://www.ers.usda.gov/Briefing/CPIFoodAndExpenditures/Data/table13.htm October 2006.

The outlook for changes in consumer food prices are shown in Table 2 – 3 below. In 2005, the CPI for all food was 2.4, meaning the prices for all consumer foods increased approximately 2.4% from the previous year. This was a relatively small increase compared to very recent years'; however, the annual average inflation rate over the past 10 years (1996-2005) has been 2.5 percent. Fierce competition among retailers handling food and the increased competition by low-price, discount stores exert pressures to keep food prices low, even though these will be partially offset by increases in energy and transportation costs.

CPIs for some of the major food groups are also reported in Table 2 – 3. The groups which did well in 2005 included beef and veal and fresh fruits and vegetables. Poultry, eggs and dairy products did not do as well and reported CPIs less than that of food overall.

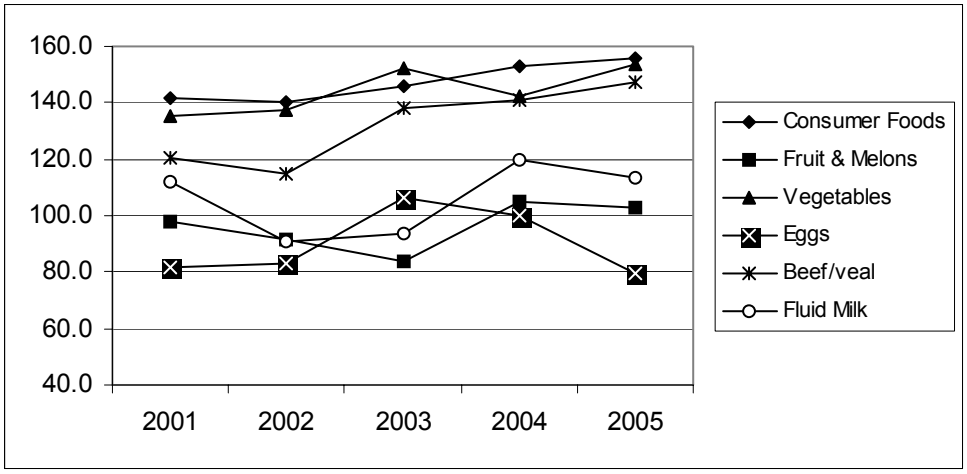
The forecast CPI for all food for 2006 is about the 10-year average and for 2007 is slightly higher than average. Again, fresh fruits and vegetables should fare well, and eggs should be able to start to see an increase over the previous year. Unfortunately, beef and veal prices are expected to slide. Poultry and dairy products actually are forecast to see a decline in overall prices in 2006 and an increase less than the average in 2007. Further information on the CPI forecasts for major food groups can be found at the USDA-Economic Research Service's Briefing Room: http://www.ers.usda.gov/Briefing/CPIFoodAndExpenditures/outlook.htm

TABLE 2 – 3 CHANGES IN CONSUMER FOOD PRICE INDEXES, 2004 THROUGH 2007				
Item	2004	2005	Forecast 2006	Forecast 2007
	percent change from previous year			
All food	3.4	2.4	2.0 to 3.0	2.5 to 3.5
Food away from home	3.0	3.1	2.5 to 3.5	2.5 to 3.5
Food at home	3.8	1.9	1.5 to 2.5	2.0 to 3.0
Beef and Veal	11.6	2.6	0.0 to 1.0	0.0 to 1.0
Poultry	7.5	2.0	-2.0 to -1.0	1.0 to 2.0
Eggs	6.2	-13.7	2.5 to 3.5	4.0 to 5.0
Dairy products	7.3	1.2	-0.5 to 0.5	0.0 to 1.0
Fresh fruits	2.8	3.7	5.0 to 6.0	3.5 to 4.5
Fresh vegetables	4.3	4.0	5.0 to 6.0	3.5 to 4.5

Source: USDA-ERS, CPI, Food and Expenditures,
http://www.ers.usda.gov/Briefing/CPIFoodAndExpenditures/Data/cpiforecasts.htm October 24, 2006.

The Producer Price Index (PPI), unlike the CPI, is based on prices received by producers from whomever makes the first purchase. For many farm products it has not changed much since 1982 which is the base year. For example, a PPI of 100.0 reflects a farm price equal to that of the base year, 1982. The PPIs shown here, in Figure 2 – 2, including that for all consumer foods, have all hovered between roughly 80 – 160%, a testimony perhaps to the great output and efficiencies of the agricultural system but also to the downward price pressures put on the system. Since 2001, fresh vegetables, excluding potatoes, have shown more consistent, overall farm price gains with a 2005 PPI of 153.5. Beef and veal have shown stronger prices in the last 2 years, while others shown below have exhibited low and fluctuating producer prices.

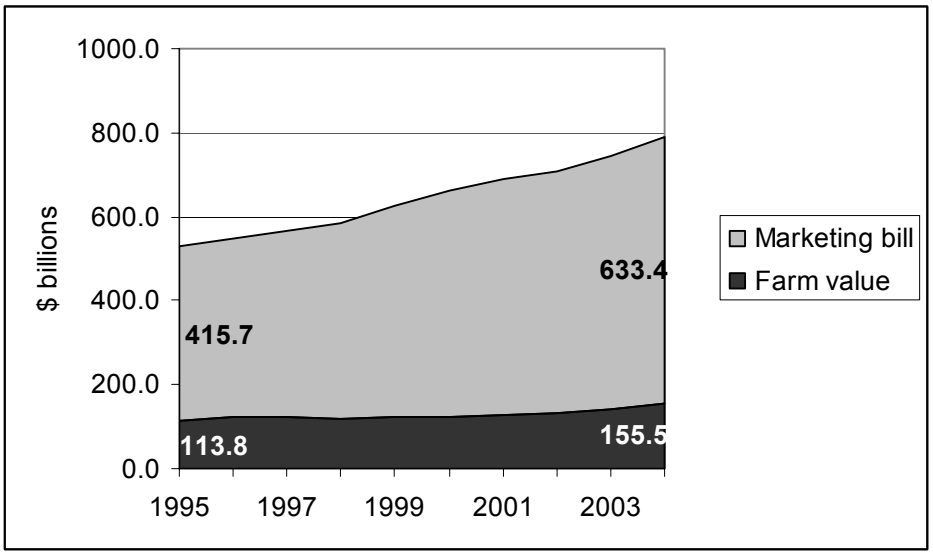
FIGURE 2 – 2. PRODUCER PRICE INDEXES, FARM PRODUCTS
Base Year = 1982



Source: USDA-ERS, Agricultural Outlook
http://www.ers.usda.gov/publications/agoutlook/aotables/2006/10Oct/aotab07.xls. October 2006.

As consumer food expenditures are increasing, so too are the farm value and marketing portions of expenditures. Farm value increased to $155.5 billion in 2004, the latest year reported, while marketing costs increased to $633.4 billion (Figure 2 – 3). These marketing costs constitute a greater and greater portion of consumer food expenditures, approximately 79% in 1995 and 80% in 2004. Reasons include greater increases in marketing costs, including processing and transportation costs, outside of the farm sector. It also is a reflection of the greater transformation of farm products to consumer ready-to-eat products. In addition, food-away-from-home costs are greater than retail costs as they include chef preparation and restaurant overhead costs. And as consumers eat out more these costs constitute a greater portion of the marketing bill.

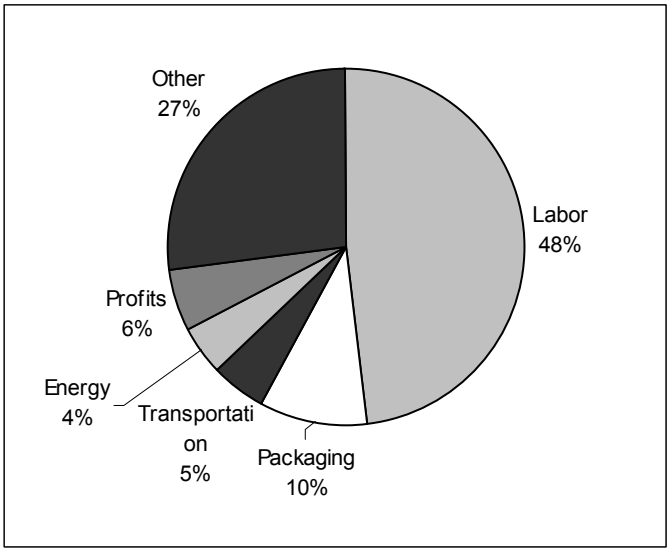
FIGURE 2 – 3. U.S. FARM VALUE AND MARKETING BILL, 1995 - 2004



Source: USDA-ERS Food Marketing and Price Spreads, http://www.ers.usda.gov/Briefing/FoodPriceSpreads/bill/table1.htm August 2006.

Marketing costs tracked and calculated by USDA-ERS are all the costs to transport and transform first point of sale farm food to food purchased by the consumer at retail or restaurant. These costs include all those costs associated with processing, wholesaling, transportation, retailing costs, and profits. In general, most of the marketing costs on a percentage basis remain steady (Figure 2 – 4). Energy as a percent of marketing increased slightly in 2004 as well as did intercity transportation, but over the past decade these costs have remained steady if not decreasing slightly. Labor has shown a slight increase over the last decade as well as corporate profits before taxes.

FIGURE 2 – 4. MARKETING BILL COMPONENTS FOR FOOD PRODUCED IN THE U.S., 2004



"Other" includes depreciation, rent, advertising and promotion, interest, taxes, licenses, insurance, professional services, local for-hire transportation, food service in schools, colleges, hospitals, and other institutions, and miscellaneous items

The marketing bill is the difference between the farm value and consumer expenditures for these foods at both food stores and restaurants. Thus, it covers processing, wholesaling, transportation, retailing costs, and profits.

Source: USDA-ERS, Food Marketing and Price Spreads,
http://www.ers.usda.gov/Briefing/FoodPriceSpreads/bill/table2.htm August 2006

Chapter 3. Cooperatives

Brian M. Henehan, Senior Extension Associate

U.S. Situation

Farmer cooperatives in the U.S. had gross sales of over $121 billion in 2005. Total business volume was up 3.7 percent from $117 billion in 2003.

Table 3-1. U.S. FARMER COOPERATIVES, COMPARISON OF 2005 AND 2003

Item	2005	2003	Change
	($ billion)	*($ billion)*	*percent*
Sales			
Marketing	77.9	77.2	+0.1
Farm Supplies	39.3	35.5	+1.0
Service	3.9	3.4	-0.05
Total	121.2	116.9	+3.7
Balance sheet			
Assets	46.5	47.8	-2.7
Liabilities	27.0	27.8	-2.1
Equity	19.5	20.0	-2.5
Liabilities and net worth	46.5	47.8	-2.8
Income Statement			
Sales	121.2	116.9	+3.7
Net income before taxes	2.5	1.4	+78.5
Employees	*(Thousand)*	*(Thousand)*	
Full-time	125.3	165.1	-24.1
Membership	(Million)	(Million)	
	2.6	2.8	-.05
Cooperatives	(Number)	(Number)	
	2,982	3,086	-.06

Source: Farmer Cooperative Statistics, 2005, preliminary unpublished data, USDA Rural Development, Washington, D.C.

Sales of marketing and supply cooperatives as well as related services all increased in 2005. Total cooperative marketing of farm products increased .1 percent to $77.9 billion. Total sales of farm supplies amounted to just over $39 billion or a 1 percent increase from 2003. Farm services grew slightly to $3.9 billion in 2005.

Total assets decreased by 2.7 percent, liabilities decreased by 2.8 percent and equity decreased by 2.5 percent from 2003 to 2005. Total net income before taxes increased significantly by 78.5 percent or $1.1 billion.

Farmer cooperatives remain one of the largest employers in many rural communities. Although restructuring and downsizing have reduced the number full time employees in 2005 to 124,000 or by 24 percent from 2003.

Farm numbers continue to decline, as do memberships in cooperatives and the number of farmer cooperatives. Cooperative memberships stood at 2.6 million, down about .05 percent from 2003. Many farmers are members of more than one cooperative, hence cooperative memberships exceed U.S. farm numbers. There are now 2,982 farmer cooperatives, down from 3,086 in 2003.

New York State Situation

Data for agricultural cooperatives headquartered in New York State were obtained from a Cooperative Service survey cited below. State level data are collected every other year. The most current statistics available are for the years of 2001 and 2003. Table 3-2 summarizes cooperative numbers and business volume for New York State.

Table 3-2. NEW YORK STATE AGRICULTURAL COOPERATIVE NUMBERS AND NET BUSINESS VOLUME BY MAJOR BUSINESS, 2001 and 2003[1]

Major Business Activity	Number Headquartered in State		Net Volume	
	2001	2003	2001	2003
			($ million)	
Marketing:				
Dairy	64	61	1,254.0	1,229.9
Fruit & Vegetable	9	9	523.6	72.5
Other Products[2]	6	6	232.3	152.1
TOTAL MARKETING	79	76	2,009.9	1,454.5
Supply:				
Crop Protectants			31.5	50.9
Feed			111.9	103.8
Fertilizer			51.2	42.6
Petroleum			278.7	28.5
Seed			21.0	57.8
Other Supplies			121.9	73.7
TOTAL SUPPLY	8	11	616.3	357.3
Related Service[3]	5	[included with supply]	199.6	242.3
TOTAL	92	87	2,825.8	2,054.1

Source: Farmer Cooperative Statistics, 2001, RBS Service Report 59, USDA, RBS, Washington, DC March, 2000 and Farmer Cooperative Statistics, 2003. Rural Development Service Report 64, USDA, Washington, DC April, 2006.

[1] Totals may not add due to rounding.

[2] Includes wool, poultry, dry bean, grains, livestock, maple syrup, and miscellaneous.

[3] Includes those cooperatives that provide services related to cooperative marketing and purchasing.

The number of agricultural cooperatives headquartered in New York State in 2003 showed a net decrease of 5 cooperatives from 2001, with fewer dairy cooperatives and a decrease in the number of service and supply cooperatives. Total net business volume declined from $2,826 million in 2001 to $2,054 million in 2003, a decrease of 27 percent. It should be noted that state level data for agricultural cooperatives are becoming more difficult to obtain as more cooperatives operate across a broader multi-state area. Cooperatives headquartered in New York State generate significant business volume outside of New York State and a number of cooperatives headquartered outside of New York generate significant volume in New York.

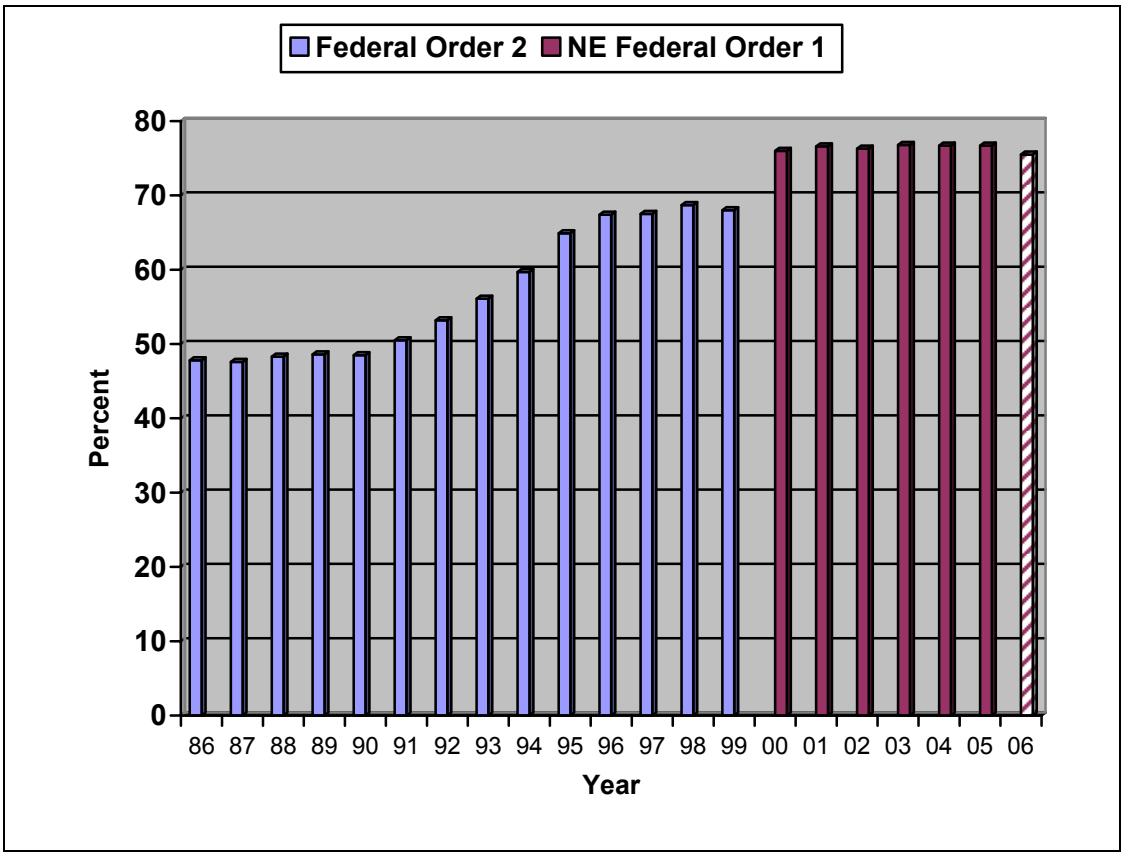
Total net volume for marketing cooperatives decreased by $555 million, with fruit and vegetable marketing cooperatives showing a significant decrease in volume over the two year period. Total volume for other products marketed through cooperatives declined as well. A major portion of the decline in revenues for fruit and vegetable cooperatives came from restructuring in the processed fruit and vegetable industry. Net volume for dairy marketing cooperatives declined by about $24 million over the two year period.

Supply cooperative volume decreased by $259 million due to decreased overall sales as well as ongoing impact of the loss of the Agway system. Total volume for services related to marketing or purchasing increased from about $200 million to $242 million over the two-year period.

Cooperative Share of Northeast Federal Milk Marketing Order 1

As indicated in Figure 3-1, the proportion of milk receipts handled by dairy cooperatives fluctuated over the twenty-year period and leveled off at about 67 percent from 1996 to 1999 under the old Federal Order 2.

Figure 3-1. COOPERATIVE SHARE OF PRODUCER MILK RECEIPTS Federal Order 2, 1986- 1999 and Northeast Federal Order 1, 2000-2006*



Source: Market Administrator's Office, Northeast Federal Milk Marketing Order 1.

*The year 2006 is based on data for the first eight months of the year. Data from the year 2000 forward represent the consolidated Federal Milk Marketing Order 1 (the result of a merger of the old Federal Orders 1, 2, and 4).

However, the cooperative share of milk receipts increased significantly to 76 percent in 2000 under the new consolidated Order combining former Federal Order 1 (New England), Federal Order 2 (New York-New Jersey), and Federal Order 4 (Middle Atlantic) into the new Northeast Milk Marketing Order 1. The increase following the consolidation of Orders was primarily the result of pre-existing higher percentages of milk being shipped to cooperatives in the former Orders 1 and 4. Those higher percentages increased the total average of milk received by cooperatives in the new Order 1. The cooperative share of milk receipts for the first nine months of 2006 declined slightly to 75 percent from an average of 77 percent during the previous year.

Cooperative Performance

The financial performance of agricultural cooperatives operating in New York State has on the whole been good. Due to the importance of dairy marketing and service cooperatives to New York producers, I will review their situation first.

As discussed above, the share of milk receipts accounted for by dairy marketing cooperatives under Federal Milk Marketing Order 1 has remained stable at about 75 percent from 2000 through 2005. For the first nine months of 2006, the cooperative share has declined by 2 percent. An additional share of milk produced by farmers who are not cooperatives members is being marketed in Federal Order 1 by a common marketing agency that also handles a major share of milk from cooperative members.

Unfavorable weather conditions including flooding in the Southern Tier during the crop season, has put pressure on crop harvests and milk production. Excessive rainfall during planting and harvest seasons in some areas of New York will have a negative impact on farm supply sales and milk deliveries to dairy cooperatives.

Milk prices have declined over the last year which contributed to more sluggish performance of cooperatives offering dairy herd improvement or breeding genetics to members. Export sales of genetics and increased international operations have added to the revenues of the major genetics cooperative.

Dairy cooperatives involved in value-added operations experienced mixed results. A New York headquartered dairy marketing cooperative constructed a new soft products plant, the first new plant being built in New York State in a number of years. The plant is up and operating while sales of yogurt has been strong.

A dairy product manufacturing cooperative running various types of processing plants has been experiencing operating losses due to increased costs of energy, packaging and high value inventories as well as weak cheese sales. A number of operating cooperatives across the U.S. are arguing that the USDA "make allowance" for manufacturing various dairy products needs to be adjusted. The US Department of Agriculture determines make allowances, which are estimates of the costs of manufacturing a number of dairy products, which are used in federal milk pricing formulas. USDA is currently conducting a review for a decision on whether the make allowances need to be changed.

The bankruptcy settlement of the major supply cooperative continues as unsecured creditors have received periodic distributions from 2004 through 2006. Payments are being made to unsecured creditors until the Trust created by the bankruptcy court is exhausted. Total payments to be received by unsecured creditors, many of whom were members or retired farmers, are estimated at between 54 cents and 66 cents on the dollar.

As of June 26, 2006, a total of five distributions have been made adding up to 51 cents on the dollar. Until all outstanding accounts are identified and all costs are deducted from the Trust, the value of the total distribution cannot be determined.

The major juice grape cooperative in New York has reported weaker sales, higher expenses and lower returns to growers. Consumer dietary trends have hurt sales of fruit juices. A new CEO has been selected to run the marketing company. He has trimmed management positions and is cutting costs. New marketing strategies have been implemented to improve performance.

A fresh apple marketing cooperative continues to grow with new members joining from across a broader geography. This organization works on improving the coordination of marketing and quality control on behalf of members.

The major vegetable processing cooperative continues to re-structure operations following a change in its relationship with a major food processing customer. Acreage of processing vegetables delivered to the cooperative continues to increase, although variable weather limited production in some areas.

A major fruit and frozen vegetable processing firm has announced the sale of several processing plants in New York and other states. A new buyer has not been announced at this point.

The Farm Credit associations experienced relatively good financial performance during the year. However, weaker prices for a number of commodities combined with poor weather in some areas to have contributed to weaker farm financial performance and creditworthiness.

The cooperative bank that lends to rural cooperatives in the U.S. and New York, showed positive results during the most recent year that data are available. Net income, cash patronage distributions and member equity all increased from last year.

Cooperative Outlook

Most cooperatives operating in New York State had positive results in 2006. Weaker milk prices hindered the performance of dairy marketing and service cooperatives. Although milk prices are projected to increase somewhat in 2007 from depressed levels, many dairy producers continue to receive prices below their cost of production and are tapping into credit reserves. Dairy cooperatives will experience a decrease in member numbers as financially distressed farmers exit farming. The extent of farm sales is unclear.

Dairy cooperatives with value-added operations may experience less volatile costs for processing milk, packaging, transportation, and ingredients as energy prices stabilize. It remains to be seen how energy prices unfold in 2007. USDA is projected to announce an adjustment in the make allowance that will provide better margins for processing cooperatives but reduce the prices paid farmer members for their milk.

Dietary concerns of consumers such as low carbohydrate diets and childhood obesity will continue to impact sales of consumer food products produced or sold by marketing cooperatives. The "low-carb" craze of the past several years has waned a bit, but the increasing incidence of diabetes and childhood obesity continues to be a consumer concern. These concerns have created both challenges and opportunities for marketing cooperatives.

Uncertainty over the future structure of the processed fruit and vegetable industries in New York continues to have an impact on cooperatives involved in those industries. Continued interest in new organizational structures and improved coordination will remain a priority as new players enter the industry in New York.

A Midwest cooperative that purchased several of Agway's subsidiaries continues to grow business in New York and Canada. More U.S. and New York cooperatives seek to expand their geographic reach or enter into global markets to grow and sustain operations.

Although 2006 has brought a number of challenges for cooperatives operating in New York State, increasing milk prices, stabilizing energy costs, and revitalized organizations bode well for the upcoming year. Most cooperatives operating in New York State are well positioned for solid performance in 2007.

Chapter 4. Finance

Calum G. Turvey, Professor

Table 4-1. United States Farm Balance Sheet
Current Dollars, December 31
Excluding Operator Households

Item	1995	2000	2002	2003	2004	2005	2006[c]
				billion dollars			
Assets							
Real Estate	741	946	1,046	1,112	1,307	1,520	1,638
Livestock	58	77	76	79	79	81	76
Machinery	89	90	94	96	102	105	104
Crops[a]	27	28	23	24	24	24	24
Purchased Inputs	3	5	5	6	6	6	7
Financial Assets	49	57	60	62	66	67	71
Total	967	1,203	1,304	1,379	1,585	1,805	1,919
Liabilities & Equity							
Real Estate Debt	79	91	103	108	107	114	119
Nonreal Estate Debt[b]	72	87	90	90	94	100	97
Total	151	178	193	198	202	214	217
Owner Equity	816	1,025	1,111	1,181	1,383	1,591	1,702
Total	967	1,203	1,304	1,379	1,585	1,805	1,919
Percent Equity	84	85	85	86	85	87	87

[a] Excludes crops under CCC loan.
[b] Excludes CCC loans.
[c] Forecast

Table 4-2. Changes in Structure, United States Farm Balance Sheet
Current Dollars, December 31
Excluding Operator Households

Item	1995	2000	2002	2003	2004	2005	2006[c]
				percent of total			
Assets							
Real Estate	77	79	80	80	82	84	85
Livestock	6	6	6	6	5	4	4
Machinery	9	8	7	7	6	6	5
All Other[a]	8	7	7	7	7	6	6
Total	100	100	100	100	100	100	100
Liabilities							
Real Estate Debt	52	51	53	55	53	53	55
Nonreal Estate Debt[b]	48	49	47	45	47	47	45
Total	100	100	100	100	100	100	100

[a] Excludes crops under CCC loan.
[b] Excludes CCC loans.
[c] Forecast

Source: Agricultural Income and Finance Outlook, ERS, USDA; Agricultural Outlook: Statistical Indicators, ERS, USDA.

Table 4-3. Distribution of United States Farm Debt by Lender
Current Dollars, December 31
Excluding Operator Households

Item	1990	1995	2000	2002	2003	2004	2005
				billion dollars			
Real Estate							
Farm Credit System	25.8	24.8	29.7	37.8	40.1	41.1	44.3
Individuals & Others	15.1	18.0	17.2	17.9	18.3	17.8	17.2
Commercial Banks	16.2	22.3	29.8	33.1	35.1	34.5	40.0
Farm Service Agency	7.6	5.1	3.4	3.2	2.9	2.4	2.2
Insurance Companies	9.7	9.1	11.0	11.4	11.6	11.6	10.5
CCC-Storage	a	0	0	0	0	0	0
Total	74.4	79.3	91.1	103.4	108.0	107.4	114.3
Nonreal Estate[b]							
Commercial Banks	31.3	37.7	44.8	44.4	43.5	45.7	50.0
Farm Service Agency	9.4	5.1	4.2	4.0	3.8	3.4	3.1
Merchants & Dealers	12.7	16.2	20.8	21.9	22.6	23.5	22.8
Farm Credit System	9.8	12.5	16.7	19.7	20.1	21.8	23.9
Total	63.2	71.5	86.5	90.0	90.0	94.3	95.9

[a] Less than .05 billion.
[b] Excludes crops under CCC loan.
[c] Forecast: Data not available for 2006 at time of writing. Sums may differ from Table 4-1

Table 4-4. Market Share of United States Farm Debt by Lender
Current Dollars, December 31
Excluding Operator Households

Item	1990	1995	2000	2002	2003	2004	2005
				percent of total			
Farm Credit System	26	25	26	30	30	31	32
Commercial Banks	35	40	42	40	40	40	42
Farm Service Agency	12	7	4	4	3	3	2
Insurance Companies	7	6	6	6	6	6	5
Individuals & merchants	20	22	22	20	21	20	19
Total[a]	100	100	100	100	100	100	100

[a] Excludes crops under CCC loan.

Source: Economic Research Service, USDA, Data, Farm Balance Sheet.

The value of U.S. farm assets increased 6.3% in 2006, well in excess of the rate of inflation, which was 3.4%. Sector debt levels, however, increased by only 1.4%, slightly lower than the 2.8% observed through 2005. Consequently, the rate of growth in farm equity was 6.3%, about the same growth observed in 2005. Real estate debt increased by about 4.4% in comparison with only a 3% decrease in non-real estate debt. Part of this shift results from the need to fund higher value real estate and part reflects a change in methods of securing farm loans. The Farm Service Agency continues to reduce its direct lending to agriculture as it shifts to more guaranteed lending activity. Real estate values continue to rise across the United States with an increase of 7.76% between 2005 and 2006.

Table 4-5. New York Farm Balance Sheet
Current Dollars, December 31
Excluding Operator Households

Item	1995	2000	2002	2003	2004	2005	2006
				million dollars			
Assets							
Real Estate	8,165	9,595	10,418	10,894	12,809	14,896	16,052
Livestock	1,138	1,360	1,415	1,634	1,430	1,684	1,581
Machinery	1,838	1,654	1,687	1,736	1,846	1,900	1,882
Crops[a]	352	308	329	338	331	331	331
Purchased Inputs	88	133	153	153	163	163	190
Financial Assets	670	917	941	977	990	1,005	1,065
Total	12,251	13,967	14,943	15,732	17,209	19,979	21,101
Liabilities & Equity							
Real Estate Debt	854	957	1,095	1,139	1,124	1,197	1,250
Nonreal Estate Debt[b]	1,318	1,552	1,660	1,669	1,739	1,850	1,795
Total	2,172	2,509	2,755	2,808	2,863	3,047	3,045
Owner Equity	10,079	11,458	12,188	12,924	14,346	16,932	18,056
Total	12,251	13,967	14,943	15,732	17,209	19,979	21,101
Percent Equity	82	82	82	82	83	85	86

[a] Excludes crops under CCC loan.
[b] Excludes CCC loans.

Table 4-6. Changes in Structure, New York Farm Balance Sheet
Current Dollars, December 31
Excluding Operator Households

Item	1995	2000	2002	2003	2004	2005	2006
				percent of total			
Assets							
Real Estate	67	68	70	69	74	75	76
Livestock	9	10	9	11	8	8	7
Machinery	15	12	11	11	11	10	9
All Other	9	10	10	9	7	7	8
Total[a]	100	100	100	100	100	100	100
Liabilities							
Real Estate Debt	39	40	40	41	39	39	41
Nonreal Estate Debt[b]	61	60	60	59	61	61	59
Total	100	100	100	100	100	100	100

[a] Excludes crops under CCC loan.
[b] Excludes CCC loans.

Source: Economic Research Service, USDA, Data, Farm Balance Sheet.

2006 saw an increase in NY farm assets of 5.6%, slightly lower than the U.S. average. Livestock inventory fell from $1,684 million in 2005 to $1,581 million in 2006, a decrease of nearly 6%. Changes in real estate debt followed the pattern for the U.S.

Table 4-7. New York Farm Debt by Lender
Current Dollars, December 31
Excluding Operator Households

Item	1990	1995	2000	2002	2003	2004	2005
				million dollars			
Real Estate							
Farm Credit System	404	332	400	510	540	555	598
Individuals & Others	216	256	244	254	260	253	244
Commercial Banks	116	146	218	242	257	252	292
Farm Service Agency	156	116	83	77	69	58	53
Insurance Companies	9	4	12	12	13	13	12
CCC-Storage	a	0	0	0	0	0	0
Total	901	854	957	1,095	1,139	1,131	1,199
Nonreal Estate							
Commercial Banks	417	374	435	430	423	443	485
Farm Service Agency	219	176	188	177	170	152	138
Merchants & Dealers	216	274	352	371	382	397	385
Farm Credit System	416	494	577	682	694	754	827
Total[b]	1,268	1,318	1,552	1,660	1,669	1,746	1,797

[a] Less than .5 million.
[b] Excludes CCC loans.

Table 4-8. Market Share of New York Farm Debt by Lender
Current Dollars, December 31
Excluding Operator Households

Item	1990	1995	2000	2002	2003	2004	2005
				percent of total			
Farm Credit System	38	38	39	43	44	45	48
Commercial Banks	25	24	26	24	24	24	26
Farm Service Agency	17	14	10	9	9	7	6
Insurance Companies	a	a	1	1	a	a	a
Individuals & Merchants	20	24	24	23	23	23	21
Total	100	100	100	100	100	100	100

[a] Less than .5 percent.

Source: Economic Research Service, USDA, Data, Farm Balance Sheet.

During the last few years the New York commercial bank market share has declined slightly. Banks have increased real estate lending but experienced declining non-real estate volume while Farm Credit has experienced increases at both real estate and non-real estate volume. The USDA no longer provides state specific lending activities. However, if we assume that lending activity in NY is following the same pattern as the U.S., then FCS debt will have increased by 12.7% over 2003 to $608.7 million, commercial lending by 13.96% to $292.9 million and FSA loans will have declined by about 13.8% to about $59.5 million. The FCS held about $708 million in non real estate debt, compared to $448.3 million in commercial loans. The total market share of FCS in 2005 is estimated to be 44% compared to 24.8% for commercial loans. At the time of writing, 2006 estimates were not available but the general trend is expected to remain the same.

Table 4-9. Nonaccrual and Nonperforming Loans
Farm Credit System, December 31

Year	Nonaccrual	Nonperforming[a]
	percent of loan volume	
1988	6.5	12.3
1989	5.1	11.0
1990	4.5	9.7
1991	3.7	8.0
1992	2.7	6.0
1993	2.3	4.2
1994	1.9	2.9
1995	1.4	2.1
1996	1.1	1.5
1997	0.9	1.3
1998	1.8	2.1
1999	1.4	1.6
2000	0.9	1.2
2001	0.9	1.2
2002	1.0	1.3
2003	1.1	1.3
2004	0.7	0.8
2005	0.6	0.6
2006 (03/30)	0.5	0.6

[a] Nonaccrual plus accrual that are restructured or 90 days or more past due (impaired loans).

Source: Annual and Quarterly Reports of the Farm Credit System.

Table 4-10. Nonaccrural, Nonperforming, and Total Delinquent
United States Commercial Banks, December 31

	Farm Nonreal Estate Loans			Farm Real Estate Loans		
Year	Nonaccrual	Nonperforming[a]	Delinquent[b]	Nonaccrual	Nonperforming	Delinquent
	percent of loan volume					
1987	4.2	4.8	6.5			
1988	2.9	3.3	4.5			
1989	1.9	2.3	3.7			
1990	1.6	1.9	3.1			
1991	1.6	1.9	3.2			
1992	1.5	1.8	2.8	1.0	1.3	2.1
1993	1.2	1.4	2.2	0.8	1.1	1.8
1994	0.9	1.1	2.0	0.9	1.4	2.4
1995	0.9	1.1	2.1	0.9	1.4	2.4
1996	1.0	1.3	2.4	1.0	1.7	2.8
1997	0.9	1.1	2.0	0.9	1.5	2.6
1998	0.9	1.2	2.2	1.0	1.7	2.9
1999	1.1	1.3	2.1	0.7	1.3	2.0
2000	1.0	1.2	2.1	0.8	1.4	2.3
2001	1.3	1.5	2.7	1.2	1.5	2.6
2002	1.3	1.6	2.6	1.2	1.5	2.5
2003	1.2	1.5	2.3	1.1	1.3	2.1
2004	0.9	1.0	1.6	0.8	1.0	1.6
2005	0.5	0.7	1.3	0.6	0.7	1.3
2006 (6/30)	0.5	0.7	1.3	0.6	0.8	1.4

[a] Includes nonaccrural and past due 90 days but accruing.
[b] Includes nonperforming and past due 30 to 89 days but accruing.

Source: Agricultural Financial Databook, Board of Governors of the Federal Reserve System.

Table 4-11. Delinquent Major Farm Program Direct Loans
Farm Service Agency

	Farm Ownership[a]		Operating Loans[a]		Emergency Loans		Economic Emergency		Soil and Water[a]	
Date	U.S.	N.Y.	U.S.	N.Y.	U.S.	N.Y.	U.S.	N.Y.	U.S.	N.Y.
	percent of loan volume									
9/30/83	3	4	13	8	25	13	16	11	7	4
9/30/84	4	4	17	11	32	22	20	15	9	5
9/30/85	5	5	13	10	37	25	23	19	11	7
9/30/86	5	5	16	12	41	31	27	25	12	9
9/30/87	6	7	19	14	45	34	31	34	14	10
9/30/88	8	9	25	19	57	38	42	45	20	12
9/30/89	9	10	26	20	60	41	44	51	23	13
9/30/90	7	9	23	17	60	37	42	50	18	10
9/30/91	7	9	24	16	61	38	42	51	18	11
9/30/92	7	9	25	19	61	41	42	55	19	9
9/30/93	7	10	24	19	62	40	40	61	18	10
9/30/94	6	11	23	18	60	41	40	63	17	11
9/30/95	6	12	23	20	60	38	39	62	18	13
9/30/96	6	13	21	19	48	37	36	65	17	14
9/30/97	6	14	20	17	44	34	33	67	15	15
9/30/98	5	13	18	16	39	34	31	68	16	14
9/30/99	5	13	15	15	32	29	29	63	15	11
9/30/00	4	12	14	14	26	27	26	60	15	11
9/30/01	4	11	13	13	24	24	24	55	14	10
9/30/02	4	10	12	12	21	22	23	51	13	12
9/30/03	4	8	11	10	20	21	21	48	11	9
9/30/04	4	9	10	10	18	19	21	41	11	9
9/30/05	3	9	8	8	7	15	21	33	7	10

[a] Includes limited resource loans.
Source : FSA Report Code 616.

Table 4-12. Delinquent Major Farm Program Guaranteed Loans
Farm Service Agency

	Farm Ownership		Farm Operating	
Date	U.S.	N.Y.	U.S.	N.Y.
	percent of loan volume			
9/30/95	1	1	2	1
9/30/96	1	1	2	1
9/30/97	1	1	2	1
9/30/98	1	2	3	2
9/30/99	1	2	3	2
9/30/00	1	2	2	3
9/30/01	2	3	3	3
9/30/02	1	2	3	4
9/30/03	1	2	3	3
9/30/04	2	6	3	5
9/30/05	1	2	2	2

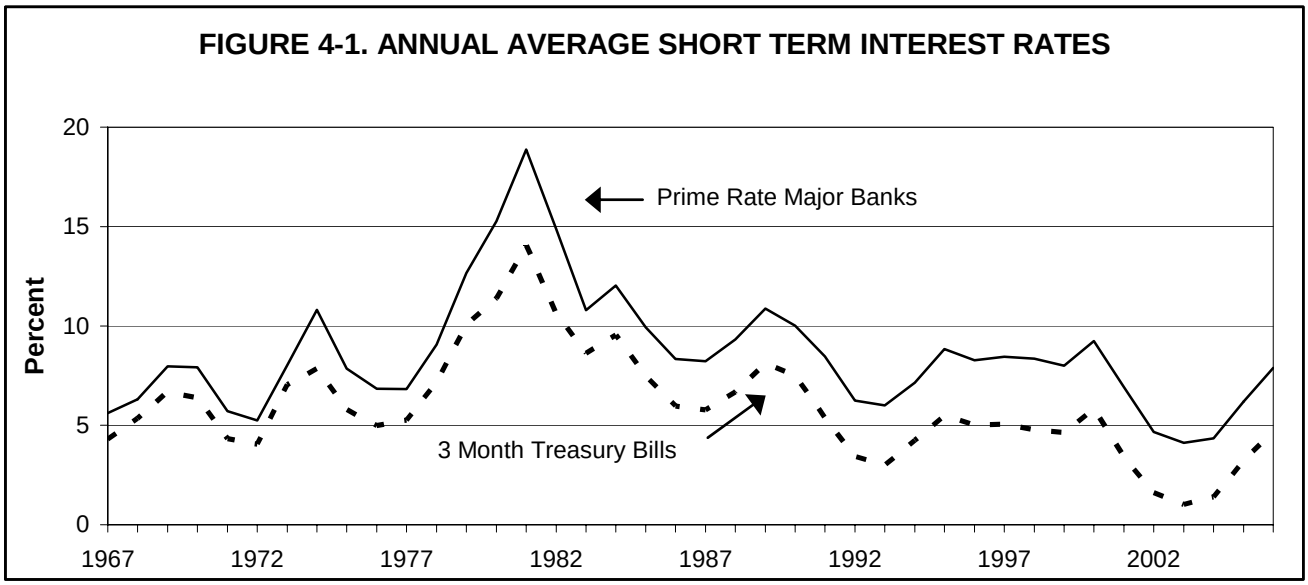
Source: FSA Reports 4067 and 4067-C.

Credit quality of commercial lenders (Farm Credit and commercial banks) continues to be very high with an overall increase in soundness in 2006. Prosperity in the large dairy sector of the New York has been used to bring borrowers current on their loans. Nonaccrual and nonperforming loans are at about as low levels as they could be expected to attain without severely restricting credit to a large group of people, most of whom are good credit risks. Throughout the farm credit system loan performance to borrowers is as a near all time high in both 2005 and 2006.

In general, Farm Service Agency delinquencies on direct loans to farmers continued a modest decline in 2005. Guaranteed loan delinquencies fell nationally and in NY quite substantially. The current delinquency rate is still quite reasonable for the risk level of the loans the program is designed to guarantee.

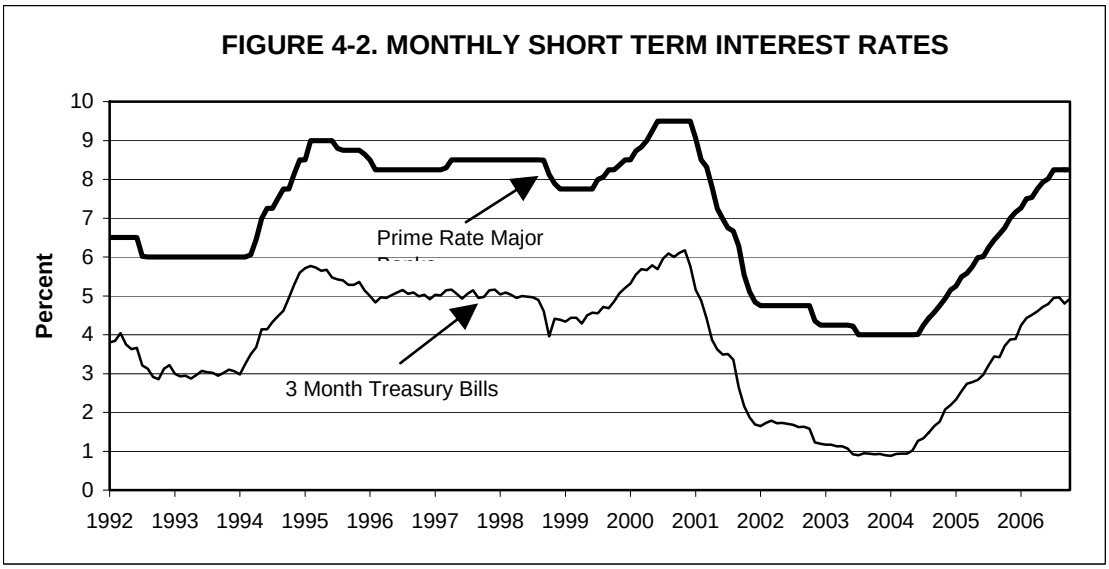
Short term interest rates bottomed out at the lowest level in 50 years in late 2003 and early 2004 and have been rising throughout 2005 and 2006. The average 2004 prime rate was 4.3% but this increased to 6.19% in 2005 and 7.89% through September 2006, an increase of 27.46%. Rates are still historically low and have not been at this level since 2001 and before that 1967. Still, as of September 2006 prime rates were at 8.25% compared to 6.59% in September 2005. In mid 2005 and continuing in 2006 the Federal Reserve Board started to push interest rates up from these historic levels in an effort to reach a more neutral monetary policy position and inflation pressure.

FIGURE 4-1. ANNUAL AVERAGE SHORT TERM INTEREST RATES



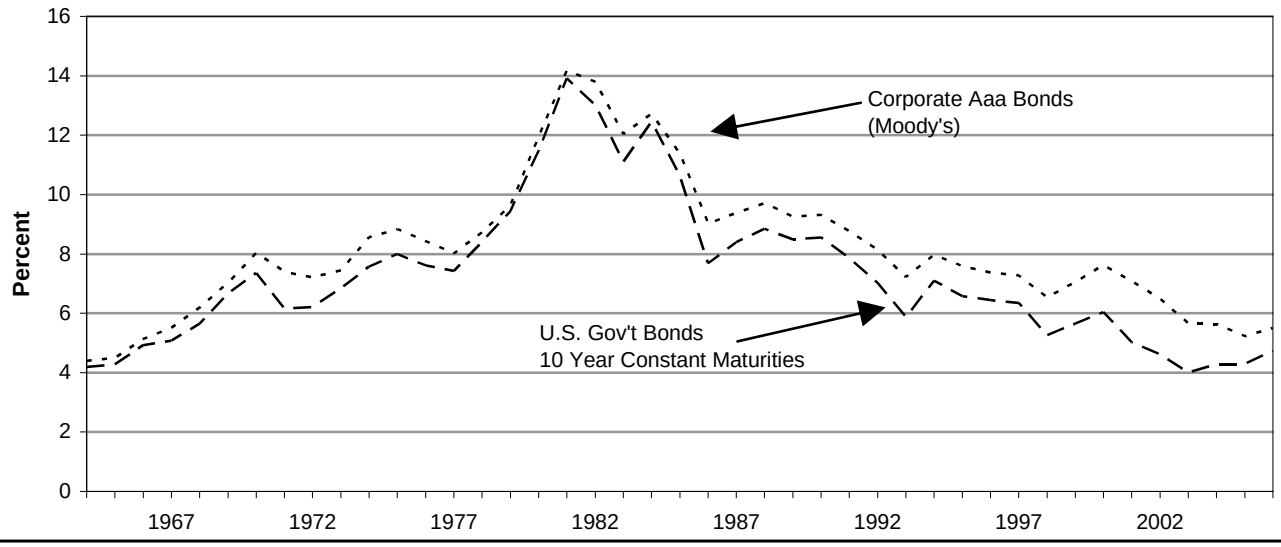
On a calendar year basis, short term rates averaged 1.4% in 2004, increased to 3.22% for 2005, and will average around 4.7% for 2006.

FIGURE 4-2. MONTHLY SHORT TERM INTEREST RATES



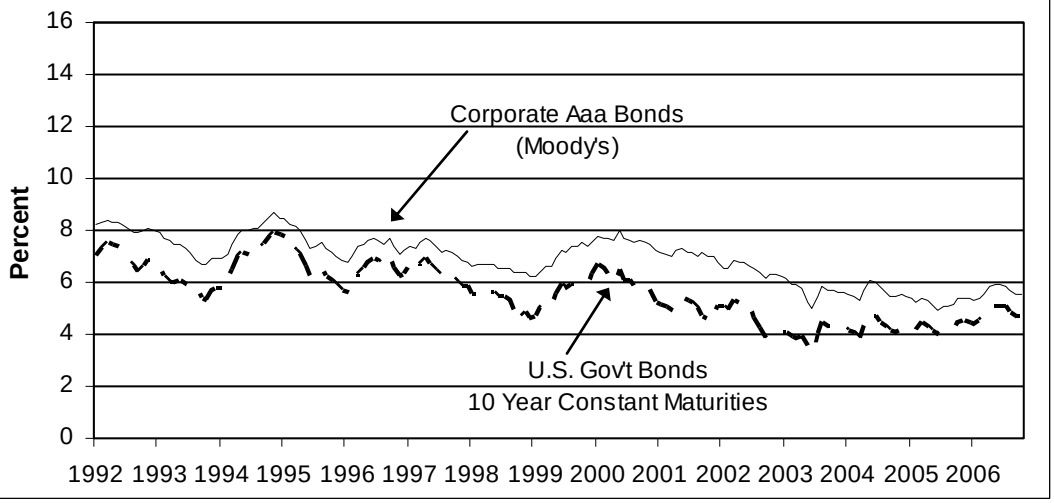
	3 Month Treasury Bills	
	2005	2006
Jan.	2.33	4.24
Feb.	2.54	4.43
Mar.	2.74	4.51
Apr.	2.78	4.60
May	2.84	4.72
June	2.97	4.79
July	3.22	4.95
Aug.	3.44	4.96
Sept	3.42	4.81
Oct.	3.71	4.92
Nov.	3.88	
Dec.	3.89	

FIGURE 4-3. ANNUAL LONG TERM INTEREST RATES



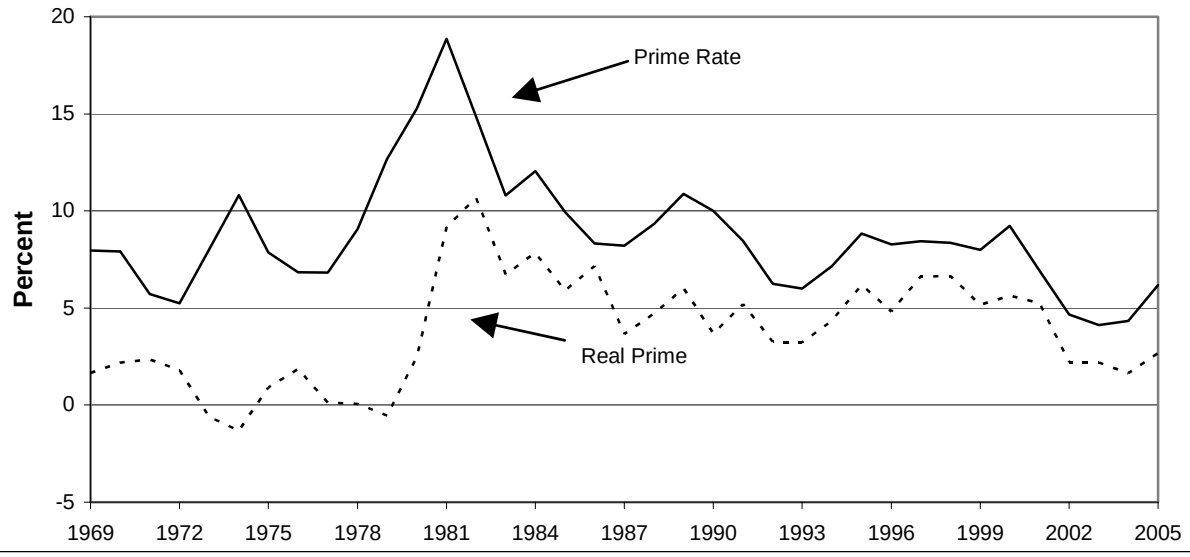
Basic long term interest rates have been quite variable over the last three years with a dip in rates during 2003 and a spike in rates during 2004 and another dip in 2005, but the resulting average level of rates has changed little. High quality corporate bonds continue to be at their lowest level since the 1960's. As of September 2006 the spread between Aaa Corporate and 10-year government bonds was only 0.78%. The increase in 10-year bonds over September 2005 levels is only 0.52%. The fact that the rate of increase in long-term government bond yields of 12.4%, from September 2005 to September 2006 is so much lower than the increase in 90-day treasury yields of 40.6% indicates that the rate hikes observed between 2005 and 2006 are beginning to stabilize and should remain fairly constant throughout 2007.

FIGURE 4-4. MONTHLY LONG TERM INTEREST RATES



U.S. Govt. Bonds		
10 Year Constant Maturity		
	2005	2006
Jan.	4.22	4.42
Feb.	4.17	4.57
Mar.	4.50	4.72
Apr.	4.34	4.99
May	4.14	5.11
June	4.00	5.11
July	4.18	5.09
Aug.	4.26	4.88
Sept	4.20	4.72
Oct.	4.46	4.73
Nov.	4.54	
Dec.	4.47	

FIGURE 4-5. CONTRACT AND REAL INTEREST RATES



Inflation continues to be of concern. The 2004 inflation rate was 2.70% and although it was expected to reach 3% in 2005 the average rate was 2.68% and the annual rate was 3.4%. This same rate has persisted through September 30, 2006. If inflation remains stable, rate increases in 2007 should be modest or even decline. Although short-term interest rates increased during 2005, inflation also increased but not as much as interest rates. The real prime rate increased from 1.64% in 2004 to 2.68% in 2005.

The yield curve flattened significantly during 2005 and into 2006. Short- term rates increased over 2005 rates while long-term rates were lower. This flattening means that the interest rate premium for fixed rate loans has declined but overall loan rates below 10 years have risen.

There are many uncertainties in the market making it difficult to predict what interest rates are going to do in 2007. Continued federal spending on the Iraq war and homeland security, coupled with reductions in tax revenue is placing significant pressure on the current account. Current account spending is being financed largely through bond issues to foreign governments. However there are a number of factors that could make inflation prediction rather erratic. As the economy grows, unemployment has fallen below 5%, which may put significant upward pressure on labor markets and wage rates. Tight labor supply, coupled with increases to the minimum wage, and immigration reform may also add pressure. The housing market is softening in many areas of the United States as buyers respond to excessive prices and higher interest rates. As housing inventories increase and the cost of new house construction rises, the housing market may end up in flux by the end of 2007. Interest only loans for example can work only if property values continually increase but a downturn in the housing market could put extreme pressure on the loan to value ratios of many mortgages placing these home buyers in negative equity position. Add to this a continuous rise in consumer non-real estate borrowing, about 3.25% through 2005, 4% in 2006, and about 30% since 2000, annual increases in debt by about 10% per year, and a personal savings rate of only 0.5% may put many households in financial jeopardy.

While the yield cure is higher in 2006 it is flatter and in fact inverted, which may indicate that interest rates will not rise by as much in 2007 as they did in 2006. This may be indicative of an economic slow down for 2007 with the economic risk premium being higher in the short term than in the long term, but a recession, at least of this date, is not indicated. However if short-term rates continue to rise relative to long term rates this may be indicative of a recession especially if short term rates exceed long term rates for a prolonged period. However a simple flattening or slight inversion of the yield curve, while indicating an increased chance of recession, is not unto itself correlated highly with impending recessions.

The current spread between the prime rate and the 90-day Treasury Bill rate is about 3.17% but the average spread is about 3.5%. Given the flattening of the yield curve 90 day rates will probably not exceed 5% if current economic conditions persist, but could rise further with inflation or any deterioration in the economy. Historically agricultural loan rates (operating and mortgage loans) have been about 1.32% above prime. This suggests that in 2007 interest rates on agricultural loans will likely settle in the range of about 9.6%, given current prime rates of 8.25%.

General Summary of Market Conditions

An inverted bond market is a good sign for credit markets and current market conditions suggest that either the bond market is fairly flat or that long term bond yields are below that of short term rates. Long term rates typically reflect future uncertainties and inflation above current conditions so markets are betting that either inflation will slow down, uncertainties in general economic conditions will wane, or both. This is good and bad news for farmers. The good news is that the markets are indicating a cap to recent rises in interest rates. With rates to agricultural lenders historically about 1.32% above the prime rate, and current prime rates holding steady at 8.25%, loan rates to agriculture should probably not exceed about 9.5% in the foreseeable future which is well above current Farm Credit rates of 8.05%. Should the most pessimistic rate occur, this may create problems for farmers who need to borrow capital for entry into agric., expansion, or to replace antiquated assets. The bad news is that it is not clear from current conditions when rates will peak or start to decline. If economic theory is correct and short term rates follow long term rates then it is possible that rates will actually fall in 2007. However, with current conditions rates will most likely hold steady or rise slightly, and then start falling in late 2007.

Agricultural real estate values continue to climb especially in the New York and the northeast. Across the Northeast urban influences have pushed the average value to $4,550 per acre, but even in the Corn Belt region farm real estate values rose 12 percent in 2005 to $3,040 per acre. Much of this growth is speculative in nature, a boon to farmers who purchased land before 2002 but perhaps problematic for farmers who have purchased land more recently. Across the United States land values are expected to rise by an average 7.6% - 15% through 2006, and this represents an increase in excess of 57% since 2002. Farm debt is at an all time low, so agriculture is in a great equity position, increasing by 7% in the past year and 53% since 2002. Part of this increase is due to urban pressures and lower interest rates, but farmers should also bear in mind the B-word, that is bubble. A land price bubble will occur when the rate of increase in farmland prices is greater than the rate of increase in the cash flows generated from the land. With most commodity prices flat or falling with significant drops in milk prices through August 2006, one would expect farmland prices to stabilize. But in many markets in the Northeast, farmland prices are bubbling with urban real estate prices and any drop or softening in the real estate market will have a ripple effect on farmland, even on land that is not under urban pressure. Lest we forget the lessons of the late 1980's, inflated farmland values will eventually find true economic values. Still, urban realtors are optimistic and predict only a slowdown in urban house prices, but of course that is in their best interest. I am less optimistic, but then again I have been predicting a burst in the housing bubble for three years.

The word here is be cautious. The agricultural economy is not strong enough to support such high values of land indefinitely. Any land purchases at inflated rates will guarantee only a reduction in returns. For existing landowners, farmers' new found wealth is only on paper and can be taken away by the market as easily as it was provided. When making financial decisions try to separate the economic value of the land based upon its ability to generate cash flow from the speculative part of farmland due to non agricultural market pressure.

The congressional and senate elections in November may also have an impact on agriculture in 2007, but the news may not be bad. On the labor front, the new democratic congress will likely side with President Bush on immigration reform that includes increased access to Hispanic laborers from Mexico and Central America. The republicans may still hold sway in the senate and would pass these reforms with increased penalties to employers hiring undocumented workers. But meaningful reform would unlikely take place before the fall 2007 harvest. Threats by the democrats to increase the minimum wage will unlikely have an impact on farm wages since recent surveys indicate that farmers are already paying laborers in excess of the proposed $7.15/hour rate. Increased outreach in developing human resources from Latin America by Cornell University suggest that NY farmers are leading the way in building a loyal workforce by adapting their management practices to account for cultural sensitivities and differences.

All told, the message is a cautious one. Steady to decreasing commodity prices, speculative forces on farmland values, uncertainty in financial markets, and increased labor or even energy costs call for prudence in making financial decisions in 2007.

FIGURE 4-6. LONG AND SHORT TERM REAL INTEREST RATES

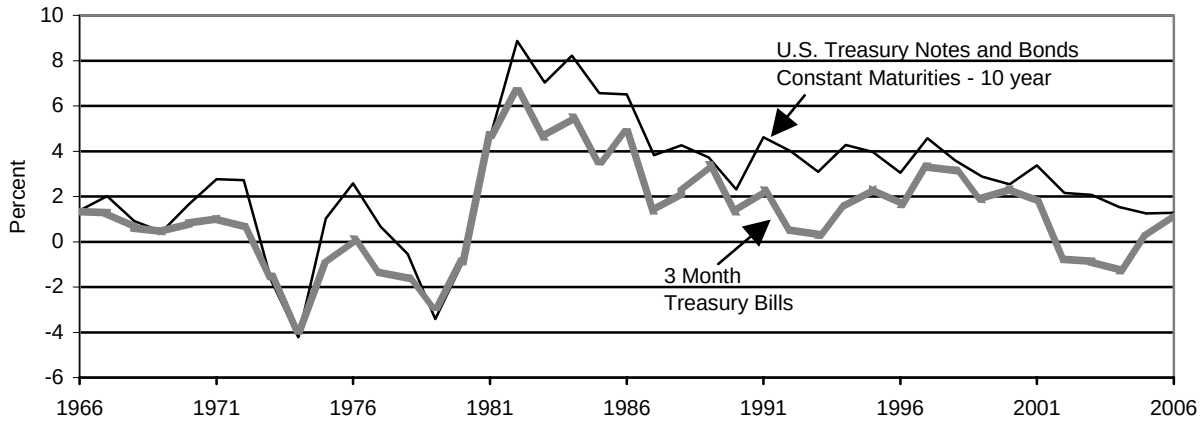
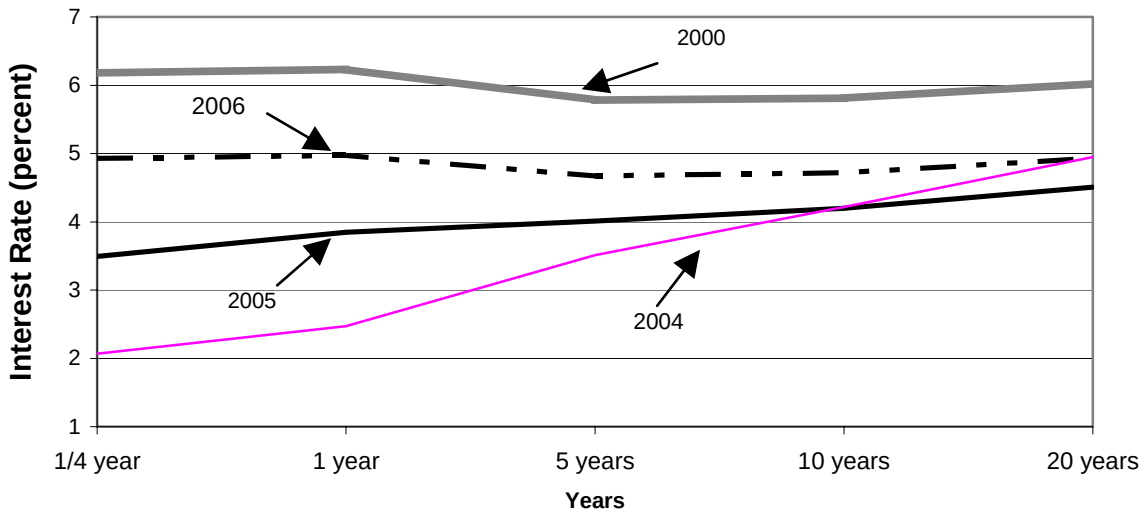


FIGURE 4-7. YIELD CURVE 1ST WEEK OF SEPTEMBER (U.S. GOVERNMENT SECURITIES)



Chapter 5. Grain and Feed

Bill Tomek, Professor Emeritus

For farmers with grain to market, 2006-07 is going to be a good year. In contrast, farmers producing milk and other livestock products face a year of higher feed costs. Basically, world-wide consumption of grains will exceed production, with a consequent increase in prices. World-wide consumption of oilseeds, however, will about equal production, with ending inventories remaining about constant at adequate levels. Nonetheless, soybean and soybean meal prices are expected to be higher. Details follow.

Corn

The national average corn yield, for the crop just harvested, is estimated to be a robust 151.2 bushels per acre, up from last year, though down from earlier projections. Spotty dry-weather conditions resulted in variable yields across the Corn Belt, and farmers planted and harvested fewer acres of corn this year than in 2005-06. Consequently, production is down about 367 million bushels from a year earlier (Table 5-1).

TABLE 5-1. U.S. SUPPLY AND DEMAND BALANCE SHEET FOR CORN[a]

	2004-05	2005-06E	2006-07F
Supply:			
Harvested Acres (million)	73.6	75.1	71.0
Yield (bushels per acre)	160.4	147.9	151.2
		(Million Bushels)	
Beginning Stocks	958	2,114	1,971
Production	11,807	11,112	10,745
Imports	11	9	10
Total Supply	12,776	13,235	12,725
Use:			
Feed & Residual	6,158	6136	6,050
Food, Seed and Industrial	2,686	2,981	3,540
Ethanol for Fuel[b]	1,323	1,603	2,150
Total Domestic Use	8,844	9117	9,590
Exports	1,818	2,147	2,200
Total Use	10,662	11,264	11,790
Ending Stocks	2,114	1,971	935
Stocks/Use Ratio	19.8%	17.5%	7.93%
Avg. farm price, U.S., $bu.	2.06	2.00	3.00
Avg. farm price, NYS, $bu.	2.37	2.05	-

[a]Data from USDA, World Agricultural Outlook Board, (November 9, 2006) "World Agricultural Supply and Demand Estimates." WASDE 440

[b]Ethanol for fuel is included in the food, seed, and industrial category and presented for illustrative purposes.

Total use will exceed production, and inventories, both world-wide and in the U.S., are expected to be drawn down sharply. Ending inventories in the U.S. on August 31, 2006 were 1.97 billion bushels and are forecast to be only 0.935 billion on August 31, 2007. If forecast consumption is realized, ending stocks will be only 7.9% of total use, down from 19.8% just two years earlier. A similar situation prevails on a world-wide basis, with a declining stocks-to-use ratio (Table 5-2).

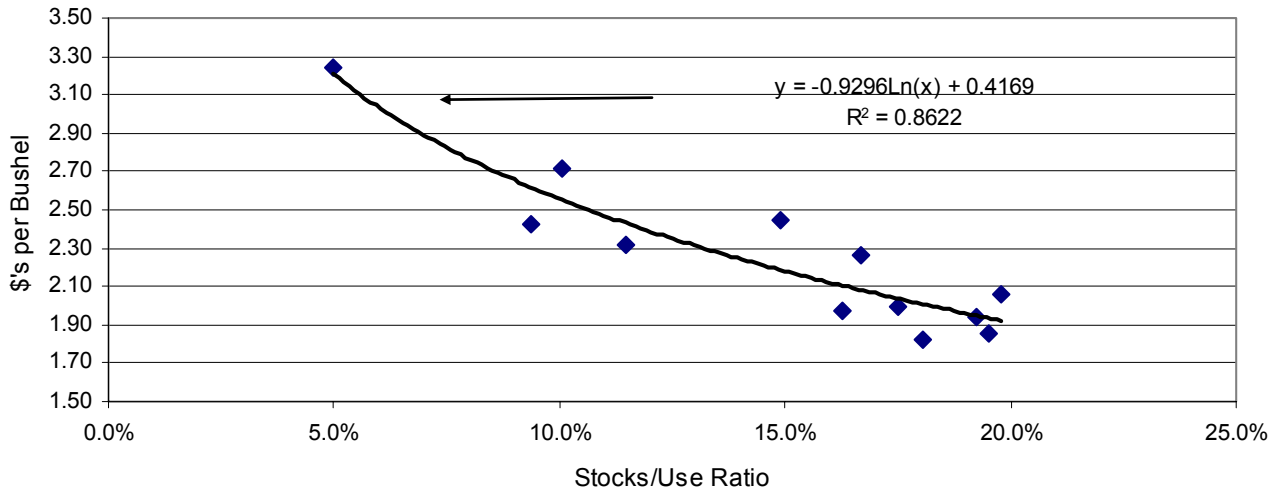
TABLE 5-2. WORLD SUPPLY AND DEMAND BALANCE SHEET FOR CORN[a]

	2004-05	2005-06E	2006-07F
Supply:		(Million Metric Tons)	
Beginning Stocks	103.23	131.23	124.55
Production	712.78	693.29	688.73
Imports	77.10	78.91	78.41
Use:			
Feed, Domestic	471.48	474.36	476.29
Total, Domestic	684.97	699.97	723.27
Exports	78.18	78.98	80.81
Ending Stocks	131.23	124.55	90.0
Stocks/Use Ratio	19.1%	17.8%	12.4%

[a]Data from USDA, World Agricultural Outlook Board, (November 9, 2006) "World Agricultural Supply and Demand Estimates." WASDE 440

Stocks-to-use ratios below 10% in the U.S. are uncommon, and imply significantly higher prices (Figure 5-1). Based on this historical relationship, the average farm price in the U.S. in 2006-07 would be about $2.80 per bushel. The official USDA forecast is a $2.80 to $3.20 per bushel range (mid-point $3.00).

FIGURE 5-1. HISTORICAL RELATIONSHIP BETWEEN CORN PRICES AND THE STOCKS TO USE RATIO, 1994-2004.[a]



[a] Data compiled from USDA Feed Grains Data Delivery System available at http://www.ers.usda.gov/db/feedgrains/

The market's estimate of prices for future delivery, as of November 10, is still higher (Table 5-3). These futures prices pertain to delivery along the Illinois waterway, running Southwest from Chicago to the Mississippi River, i.e., across Central Illinois. Farm-level prices will be lower than the futures prices, but assuming an average basis for corn of 20 cents per bushel, the implied farm prices are well above $3.00 per bushel for the marketing year. For example, the spot price of corn in Toledo Ohio is typically five to 10 cents below the May futures price on the first of May; hence, the November 10 quote of May futures ($3.6525) implies a farm price of about $3.55 in the Toledo market.

TABLE 5-3. FUTURES PRICES FOR CORN AT THE CHICAGO BOARD OF TRADE.

Contract Month	Price November 10
	- $ per bu. -
December 2006	3.4325
March 2007	3.595
May 2007	3.6525
July 2007	3.70
September 2007	3.56
December 2007	3.4475
December 2008	3.22

Higher prices will tend to discourage use, and feed use is forecast to decline slightly in 2006-07. An important driver of corn prices, however, is the demand for food and industrial uses, especially the demand for corn for ethanol production. Moreover, given the relatively small inventory to be carried into the new crop year, prices from May onward will be influenced importantly by growing conditions. Corn prices normally become more variable as the marketing year progresses through the spring and summer, and in 2007, this variability could be particularly large. The ethanol and feed situation are discussed in the last two sections of this chapter.

Wheat

High corn prices imply that feed manufacturers will be looking for other sources of energy and protein. But, the U. S. wheat crop is also short with relatively high prices. The wheat belt had dry growing conditions, and the result was a decline in harvested acres and in yields (Table 5-4). Wheat production was almost 14% lower in 2006 than in 2005, and prices for the current marketing year are likely to average a dollar a bushel higher than last year. With continuing strong demand for wheat for food uses and for exports, feed use of wheat is likely to be smaller, not larger, than last year.

An interesting scenario will play out in terms of farmers' production decisions for the grains and oilseeds in 2007. Over the longer term, acres planted to wheat have trended downward. This trend has been more-or-less offset by a modest uptrend in wheat yields. When growing conditions are poor as in 2006, the small yields combine with small area planted to give sharply higher prices. The low profitability of wheat relative to alternatives has been a major factor resulting in smaller planted acres. But this year, prices for all of the grains and oilseeds are higher, and producers will need to look carefully at the expected profitability of alternative crops in making

decisions. Acres planted and growing conditions will be important drivers of prices for the various crops in the last half of 2007.

TABLE 5-4. U.S. SUPPLY AND DEMAND BALANCE SHEET FOR WHEAT[a]

	2004-05	2005-06E	2006-07F
Supply:			
Harvested Acres (million)	50.0	50.1	45.8
Yield (bushels per acre)	43.2	42.0	38.7
		(Million Bushels)	
Beginning Stocks	546	540	571
Production	2,158	2,105	1,812
Imports	71	82	105
Total Supply	2,775	2,727	2,488
Use:			
Food	910	915	920
Seed	78	78	80
Feed & Residual	182	153	145
Total Domestic Use	1,169	1,146	1,145
Exports	1,066	1,009	925
Total Use	2,235	2,155	2,070
Ending Stocks	540	571	418
Stocks/Use Ratio	24.2%	26.5%	20.2%
Avg. farm price, U.S., $bu.	3.40	3.42	4.35
Avg. farm price, NYS, $bu.	2.80	3.05	-

[a]Data from USDA, "World Agricultural Supply and Demand Estimates", November 9, 2006 WASDE 440

Soybeans

Acres harvested for soybeans, in contrast to corn, increased, and yields are estimated to be an excellent 43 bushels per acre across the U.S. (Table 5-5). Production is estimated to be a record 3.2 billion bushels, and with a carryover of 449 million bushels, total supply is expected to be 3.657 billion bushels. World production is expected to increase 6.9 million metric tons (the U.S. crop is up 0.7 million tons), with ending inventories in the world being forecast at 25% of expected use (Table 5-6).

TABLE 5-5. SUPPLY AND DEMAND BALANCE SHEET FOR SOYBEANS[a]			
	2004-05	2005-06E	2006-07F
Supply:			
Harvested Acres (millions)	74.0	71.3	74.5
Yield (bushels per acre)	42.2	43.0	43.0
		(Million Bushels)	
Beginning Stocks	112	256	449
Production	3,124	3,063	3,204
Imports	6	3	4
Total Supply	3,242	3,322	3,657
Use:			
Crushings	1,696	1,739	1,780
Exports	1,097	947	1,145
Seed	88	93	91
Residual	104	95	75
Total Use	2,986	2,874	3,091
Ending Stocks	256	449	565
Stocks/Use Ratio	8.6%	15.6%	18.3%
Avg. farm price, U.S., $bu.	5.74	5.66	5.90
Avg. farm price, NYS, $bu.	5.40	5.20	-

[a]Data from USDA, World Agricultural Outlook Board, (November 9, 2006) "World Agricultural Supply and Demand Estimates." WASDE 440

TABLE 5-6. WORLD SUPPLY AND USE BALANCE SHEET FOR SOYBEANS[a]			
	2004-05	2005-06EF	2006-07F
Supply:			
		(Million Metric Tons)	
Beginning Stocks	38.56	48.18	52.15
Production	215.95	218.04	224.97
Imports	63.60	64.12	69.73
Use:			
Crush, Domestic	175.75	184.04	191.67
Total, Domestic	205.39	213.77	221.06
Exports	64.54	64.42	70.57
Ending Stocks	48.18	52.15	55.22
Stocks/Use Ratio	23.5%	24.4%	25.0%

[a]Data from USDA, World Agricultural Outlook Board, (November 9, 2006) "World Agricultural Supply and Demand Estimates." WASDE 440

Demand for soybeans will remain strong. But given the ample supplies, prices are surprisingly high (at least to this writer). The USDA is forecasting an annual average farm price of $5.90 per bushel, up 24 cents from last year. Moreover, the futures market is forecasting still higher prices, even after allowing for local bases. As of November 10, prices for January 2007 delivery on the Illinois waterway were $6.625 per bushel and for harvest-time (November) 2007 $6.99 per bushel (Table 5-7).

TABLE 5-7. FUTURES PRICES FOR SOYBEANS AT THE CHICAGO BOARD OF TRADE.

Contract Month	Price November 10
	$ per bu.
January 2007	6.625
March 2007	6.745
May 2007	6.8175
July 2007	6.905
August 2007	6.945
September 2007	6.95
November 2007	6.9925
November 2008	6.900

Several hypotheses may help explain why soybean prices are so high. One is that high corn prices attract acreage away from soybeans, thereby lowering expected production and raising expected (futures) prices for beans. Corn and soybean prices certainly are related. Also, the market may be expecting a larger increase in demand than is reflected in the USDA data. On the other hand, the distiller grains from ethanol production provide an alternate source for protein in cattle feed. So, it will be interesting to see how relative prices play out as planting time approaches in the Corn Belt and how this may influence production decisions.

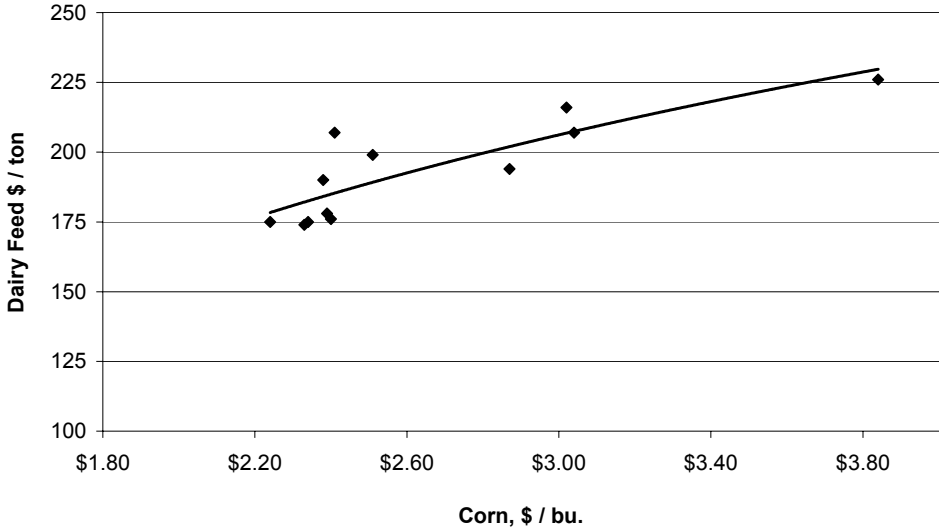
If prices of corn and soybeans remain high at planting time and hence at profitable levels for producers, they may want to consider locking in these profits for a portion of their expected crop via hedging in futures or forward contracts. For corn and soybean meal users, one type of "protection," that might be considered, is to buy call options, which provide insurance against even higher prices. It may also be possible to make forward contracts for some portion of feed needs.

Feed and Ethanol

Higher prices for corn and soybean meal mean higher prices of feed. The historical relationship between the prices of corn and dairy feed is provided in Figure 5-2. The horizontal axis represents the average price of corn in New York State in March, while the vertical axis is the April 1 price of 16% protein dairy feed in the Northeast U.S. The price of feed was $190 per ton in April 1, 2005 and $207 per ton in 2006, while the respective corn prices were $2.38 and $2.41 per bushel. Of course, factors other than the price of corn affect feed prices, and the relationship between feed and corn prices is far from an exact one. Nonetheless, higher corn prices imply higher feed costs.

Assuming corn prices are one dollar per bushel higher in 2007 than in 2006, dairy feed prices will be at least $15 per ton higher year over year, and the increase will probably be much larger than $15.

FIGURE 5-2. RELATIONSHIP BETWEEN DAIRY FEED AND CORN PRICES, 1995-2006



Ethanol production is an increasingly important driver of corn prices, and from the viewpoint of feed users, growth in ethanol output has two potential impacts. First, it increases the price of corn, hence the price of feed, but second, a by-product of ethanol–distillers grains–is a source of protein that can be used in mixed feeds, especially for dairy cows and other cattle. Larger production of ethanol implies lower prices for this source of protein in mixed feed.

So, what is going to be the future demand for corn to be used for ethanol? Some analysts have simply added the capacity of existing plants, of plants under construction, and of plants planned for construction, assuming these plants will operate at full capacity. The current plant capacity is about 5.2 billion gallons of ethanol, which require approximately 1.9 billion bushels of corn to operate at full capacity (assumed conversion factor 2.68 gallons per bushel). The USDA estimated 1.6 billion bushels were used for ethanol from September 1, 2005 through August 31, 2006. Additional capacity, under construction, is estimated at 3.8 billion gallons, which would use another 1.4 billion bushels, or 3.3 billion in total if all of this capacity were on line and fully utilized (which is unlikely). The USDA is estimating that 2.15 billion bushels will be used for ethanol in the current marketing year.

The additional capacity in the planning stages is not precisely known. A Bank of America analysis of potential investments in ethanol production estimates that planned additional output is 17.6 billion gallons. If built and operated at full capacity, these plants would use an additional 6.57 billion bushels of corn. The total corn required, adding planned capacity to current and under

construction capacity, would be over 9.9 billion bushels. This number seems unrealistic in terms of available supply of corn that could be economically available within the next five to 10 years. But, an Iowa State University analysis estimates that in the long run, ethanol production could reach a level using 11.1 billion bushels of corn. This would require huge adjustments in crop and livestock production. I summarize some guesstimates in Table 5-8, and provide qualifications to any set of estimates in an addendum which follows.

Table 5-8. CORN USED FOR ETHANOL AND CORN PRICES

Marketing Year	Ethanol Use	U.S. Price Average
	(mil. bu.)	($ per bu.)
2004-05	1,323	2.06
2005-06	1,603	2.00
2006-07	2,150	3.20+
2007-08	2,900	3.05-4.05
2008-09	3,700	3.20-4.20
Long run	11,100	4.05

Based on judgment using a variety of sources. Long-run estimate is from Iowa State Card Briefing Paper 06-BP 49; their estimates assume $60 per barrel oil price and continuation of the tax credit

The profitability of ethanol production depends importantly on the cost of the major input, corn, and on the value of the outputs, ethanol and its by-product, distiller grains. Ethanol prices, in turn, are highly correlated with wholesale gasoline prices. If ethanol were not subsidized through tax credits, the value of a gallon of ethanol would be perhaps 0.9 the wholesale price of gasoline (see qualification discussion, last section). In other words, if the wholesale price of gasoline is $1.50 per gallon, then the value of a gallon of ethanol may be approximately $1.35. Because of the way the ethanol tax credit works, $1.35 translates to an ethanol price of $1.86, although a potential limit exist on the gallons eligible for the credit. Of course, oil and corn prices are variable, and these numbers are merely illustrations.

The foregoing discussion has two implications. First, an upper limit exists on the demand for corn for ethanol. At some point, the price of ethanol relative to the price of corn will signal that further expansion of ethanol production will not be economic. Based on plausible assumptions, the demand for corn for ethanol may level off near four billion bushels, although as noted above, an Iowa State report suggests that use could ultimately rise to over 11 billion bushels (Table 5-8). While this level seems unlikely to this writer, all analyses imply that corn prices are going to have a higher average level than in the past.

Second, variability in oil prices is a new source of instability in the feed market. Corn prices are likely to fluctuate more around a higher average level. And, particularly over the next few years, as supplies adjust to new demands, grain prices are going to be especially vulnerable to weather shocks. For example, in 2007, we will have relatively small ending inventories of corn, and if we experience a hot, dry growing season, corn prices could easily sky-rocket to $5.00 per bushel. The up-side price risk for grain buyers looks a lot larger than the down-side price risk for grain

producers. From a feed users point of view, the expansion of the ethanol market has resulted in higher prices on average and introduced an added source of price risk.

Ethanol Economics: Qualifications

In preparing this chapter, I was struck by the numerous and varied assumptions about prices and technical coefficients that exist in the literature analyzing the profitability of ethanol production. Any analysis, including the discussion in this chapter, needs to be highly qualified. To help the reader better appreciation the difficulties of understanding the economics of ethanol, I list some key questions. Many relate to estimating the value of the outputs. (1) How much ethanol can be produced from a bushel of corn? The answer depends in part on the age and technology of the plant. Old analyses assumed 2.5 gallons per bushel. I used a published paper that assumed 2.68 gallons per bushel. Some analysts use 3.0 gallons per bushel, which is perhaps appropriate for recently built plants.

(2) What is the value of a gallon of ethanol relative to the price of gasoline? A U.S. gallon of gasoline contains 114,132 btu's, while one gallon of ethanol contains only 76,000. But, this is not the whole story about value. Ethanol is blended with gasoline, and it raises the octane level and serves as a replacement for the additive MTBE, which is carcinogenic. I assumed that the price of ethanol will equal 90% of the wholesale price of gasoline. This is consistent with the mileage loss in a 85% gasoline 15% ethanol blend. The price of ethanol in mid-November for current delivery is $2.10 per gallon, but $1.80 per gallon for December 2007 delivery. These prices include an allowance for the 51 cent per gallon tax credit. (3) Given the assumed relationship between gasoline and ethanol prices, what price of gasoline should be used in the computations? Are oil and gasoline prices going to rise or fall? A common benchmark in analyses is $60 per barrel for crude oil

(4) What is the value of the dried distillers grains–the by-product of ethanol production? This number depends on the supply of the by-product and its competition with alternative sources of protein. It is used mainly for cattle; it is not appropriate for hogs and poultry. A recent analysis assumed a precise price of $77.56 per ton, or $0.039 per pound. Still another assumption, that is required, is the by-product yield from a bushel of corn. An estimate in the literature is 17 pounds of dried distillers grains per bushel, which at 3.9 cents per pound, has a value of about 66 cent per bushel. (Source: Elobeid, A., et al. *The Long-Run Impact of Corn-Based Ethanol on the Grain Oilseed, and Livestock Sectors: A Preliminary Assessment*, Iowa State University CARD Briefing Paper 06-BP 49, November 2006.) But, this value will vary by region depending importantly on regional supplies and demands and transportation costs.

Other questions related to the costs of production. (5) What is the expected price of corn in the future? This will depend, in part, on how farmers respond to the expected profitability of alternative crops. To what extent, will prices induce farmers to switch from soybeans and wheat to corn? What adjustments will occur in livestock and export demands? As Tables 5-3 and 5-6 show, corn prices at harvest next year are expected to be about $3.45 and soybeans about $7.00. Another cost is the fuel to run the plant, which also has a variable price. And so on.

Bottom line. Many different assumptions can be made, resulting in diverse conclusions. It is important, therefore, to have a healthy skepticism about individual, seemingly precise

pronouncements about the magnitude of the growth in ethanol production and its likely effects. Ethanol production will grow, but limits exist on this growth. But, even at a corn-use level of four billion bushels, ethanol will be a significant determinant of corn and feed prices.

Chapter 6. Dairy — Markets and Policy

Mark W. Stephenson, Senior Extension Associate

2007 Dairy Outlook

Positive Factors:

- Slowdown in milk production
- Export opportunities
- Adequate volume of forage

Negative Factors:

- Higher energy and fertilizer costs
- More replacement heifers in herd
- New large cheese plants in the Southwest

Uncertainties:

- Farm Bill
- General economy
- Expansion of Ethanol production

New York Dairy Situation and Outlook
2003, 2004 Preliminary 2005, and Projected 2006

Item	2004	2005	2006	2007	Percent Change 05-06	Percent Change 06-07
Number of milk cows (thousand head)	655	648	645	648	-0.5	0.5
Milk per cow (lbs.)	17,786	18,639	18,900	19,000	1.4	0.5
Total milk production (million lbs.)	11,650	12,078	12,180	12,300	0.8	1.0
Blended milk price ($/cwt.)[a]	16.49	15.64	13.57	14.88	-13.2	9.7

[a] Northeast federal order statistical uniform price for farms shipping milk to Suffolk County, MA (Boston).

Table 6-1. U.S. Milk Supply and Utilization, 1999–2007

	1999	2000 *	2001	2002	2003	2004 *	2005 [a]	2006 [b]	2007 [c]
Supply									
Cows Numbers (thous.)	9,156	9,206	9,115	9,137	9,084	9,010	9,041	9,112	9,045
Production/cow (lbs)	17,771	18,201	18,139	18,612	18,748	18,958	19,577	19,957	20,235
Production	162.7	167.6	165.5	169.8	170.3	170.8	177.0	181.8	183.0
Farm Use	1.3	1.3	1.3	1.2	1.2	1.1	1.1	1.1	1.0
Marketings	161.4	166.3	164.2	168.5	169.1	169.7	175.9	180.8	182.0
Beginning Commercial Stocks	5.3	6.1	6.8	6.1	9.9	8.3	7.2	8.0	9.0
Imports	4.8	4.4	5.7	5.1	5.0	5.3	4.6	4.5	5.1
Total Supply	**171.4**	**176.8**	**176.8**	**179.8**	**184.1**	**183.3**	**187.7**	**193.3**	**196.1**
Utilization									
Commercial Disappearance	164.9	169.2	169.6	169.6	174.6	176.2	179.7	184.3	188.6
Ending Commercial Stocks	6.1	6.8	7.0	9.9	8.3	7.2	8.0	9.0	7.5
DEIP	0.3	0.4	0.1	0.0	0.1	0.1	0.0	0.0	0.0
Net Removals (excluding DEIP)	0.1	0.5	0.1	0.3	1.1	-0.2	0.0	0.0	0.0
Total Use	**171.4**	**176.8**	**176.8**	**179.8**	**184.1**	**183.3**	**187.7**	**193.3**	**196.1**

Source: Dairy Situation and Outlook, Milk Production, and Dairy Market News, U.S. Department of Agriculture. Note that total may not add exactly due to rounding.

* Leap year.

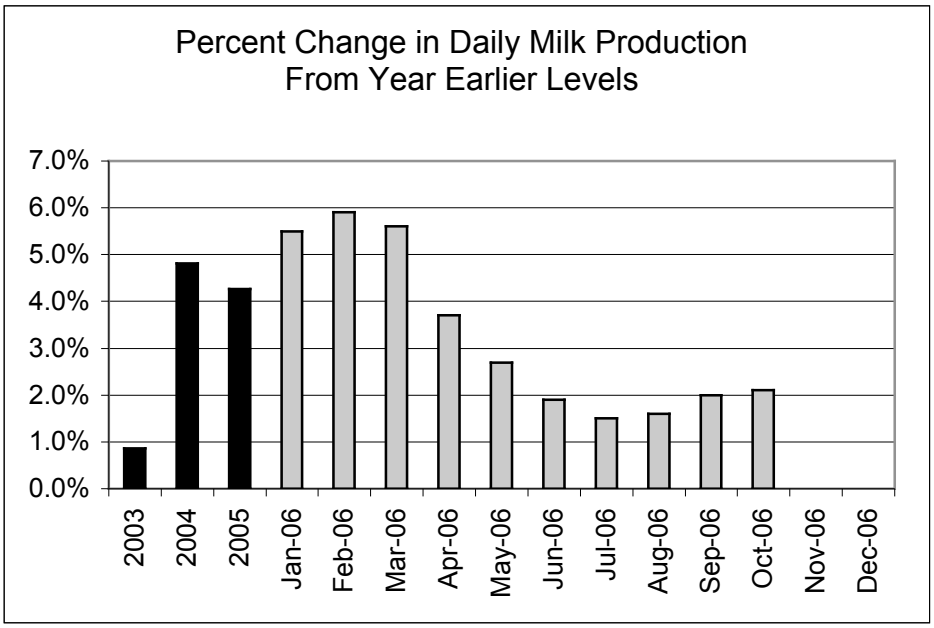
[a] Revised.

[b] Based on preliminary USDA data and Cornell estimates.

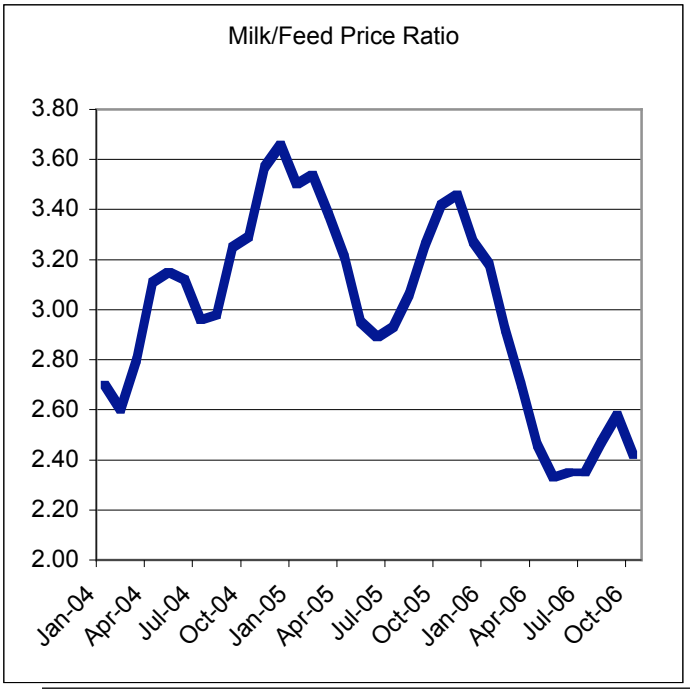
[c] Projected by Mark Stephenson.

The Dairy Situation

If we're just talking milk prices, then 2006 would be a so-so year. It was in the bottom half of prices in the last decade but really no where near as bad as 2000 or 2002. I'm not trying to diminish the impact that milk prices have had, but they aren't the entire story this past year—it was also input costs for dairy producers. Energy and related costs, such as fertilizer and milk hauling, were up and feed costs were much higher than recent years. Also, heavy rains this summer had created spotty problems for planting and harvesting across the state.



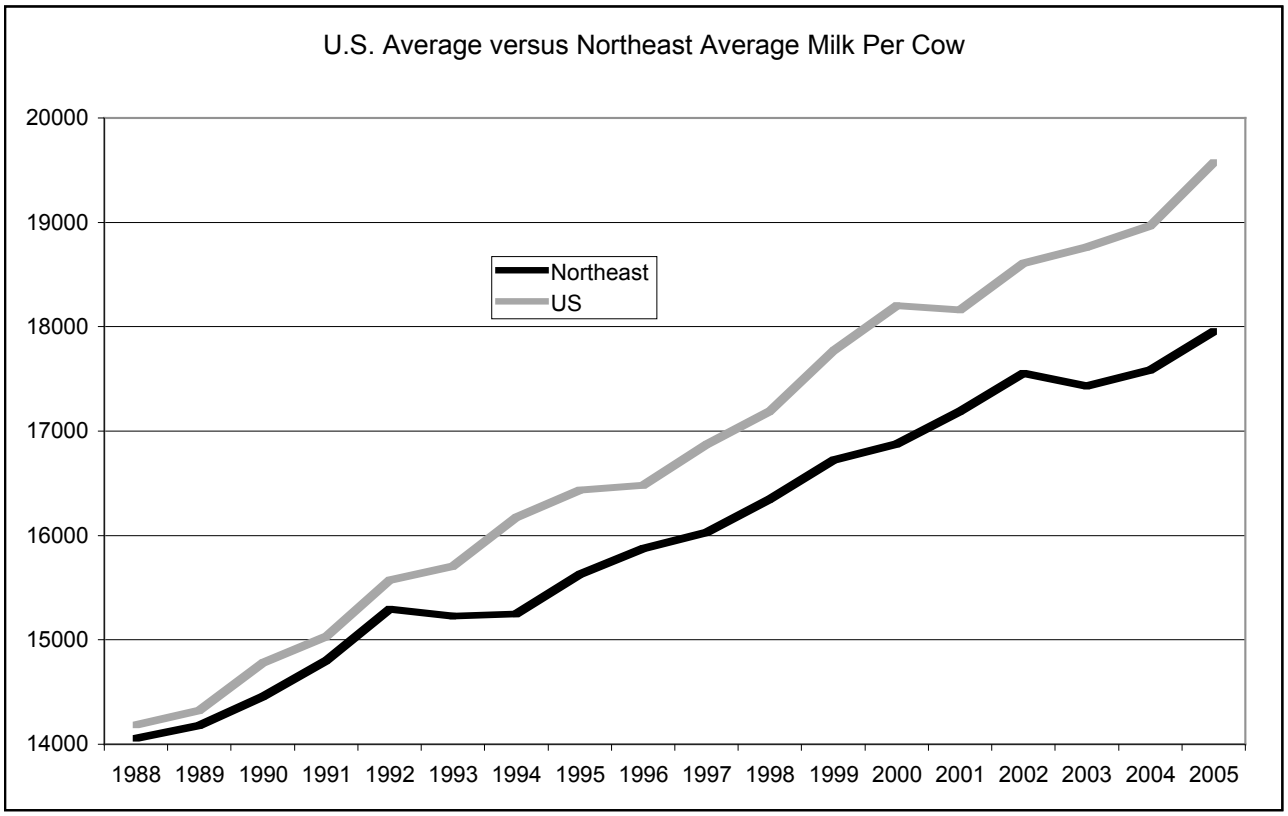
Dairy producers across the county have responded to lower milk prices and slowed the pace of production increases, but we have had year-over-year increases in every month of 2006. A very normal increase in milk production is about 1-2 percent. 2004 and 2005 were years of very large milk production increases and the first quarter of 2006 was a continuation of that pace. However, the last half of 2006 slowed the pace to more normal levels.



Feed represents the single largest input cost on a dairy farm. So, a ratio of the milk price to the feed cost gives you a good idea about margins on farms in a single number. The milk/feed price ratio had been very strong for most of 2004 and 2005 and was the reason that we produced a lot of milk in those years. However, 2006 saw both an erosion of milk prices and increases in feed costs—both of which are reflected in the chart to the left.

The Dairy Outlook

As I look toward 2007, I see mixed signals for milk prices. In the first round of Cooperatives Working Together (CWT), 32,724 milking cows were removed from the national herd. The next year, CWT removed 50,748 cows and last year the program removed 64,050 cows. Despite these removals and low, or even negative, margins on farms, milk production remains above long-term trends. There are currently about 3.8 million replacement heifers in the national herd—a number which is up 3 percent from year earlier levels and is a sign of herd-building. Animal numbers remain strong but milk per cow may help to keep overall production in check next year.



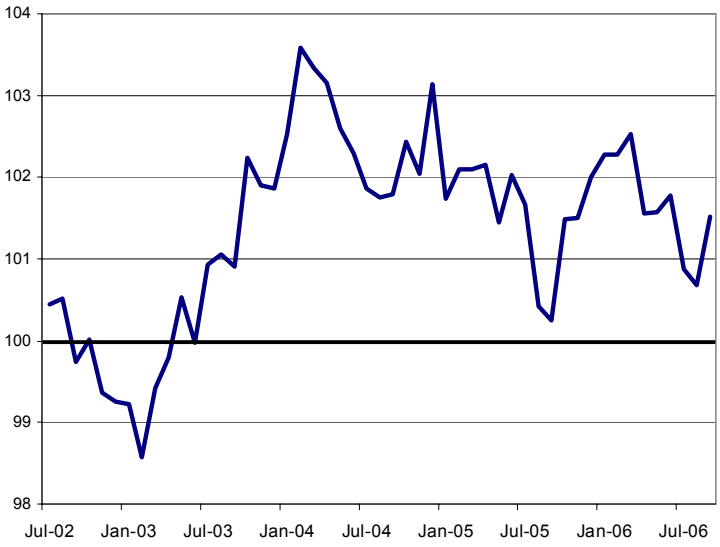
Next year, it is expected that the U.S. average milk per cow will break the 20,000 pound barrier for the first time. The Northeast has lagged the rest of the United States in milk production per cow since the late 1980s. That gap has widened to almost 1,800 pounds per cow per year and is an area of focus for Northeastern producers. Oddly, higher feed costs may help to close the gap on productivity as feed is a higher proportion of total costs of production for many other regions of the country.

Energy prices have created a frenzy of investment in ethanol production. The current annual capacity of the U.S. ethanol sector stands at 4.4 billion gallons, and plants under construction or expansion are likely to add another 2.1 billion gallons to this number within a year. Ethanol yields currently average about 2.7 gallons per bushel of corn implying that we would need about 2.4 billion bushels of corn for ethanol production next year, or nearly 25 percent of the 2006 corn crop.

The 2006 corn crop is the third largest on record but is below the levels of the 2004 and 2005 crop years. USDA is projecting that beef, pork, broilers, egg and milk production will all be greater in 2007. This competition for feed grains with other livestock and ethanol will make milk production even more expensive in the year ahead particularly for folks purchasing the majority of their feed.

Feed mills are telling me that they are seeing the effects of low milk prices and higher feed costs. Many of their customers are purchasing less grain than in previous years. In some parts of the country—most notably the Northest, there is an increased demand for rbST free milk. If that demand is to be met, and we are feeding less concentrates, we should expect to see somewhat lower milk yields in the year ahead, or at least off trend for production increases.

Restaurant Performance Index



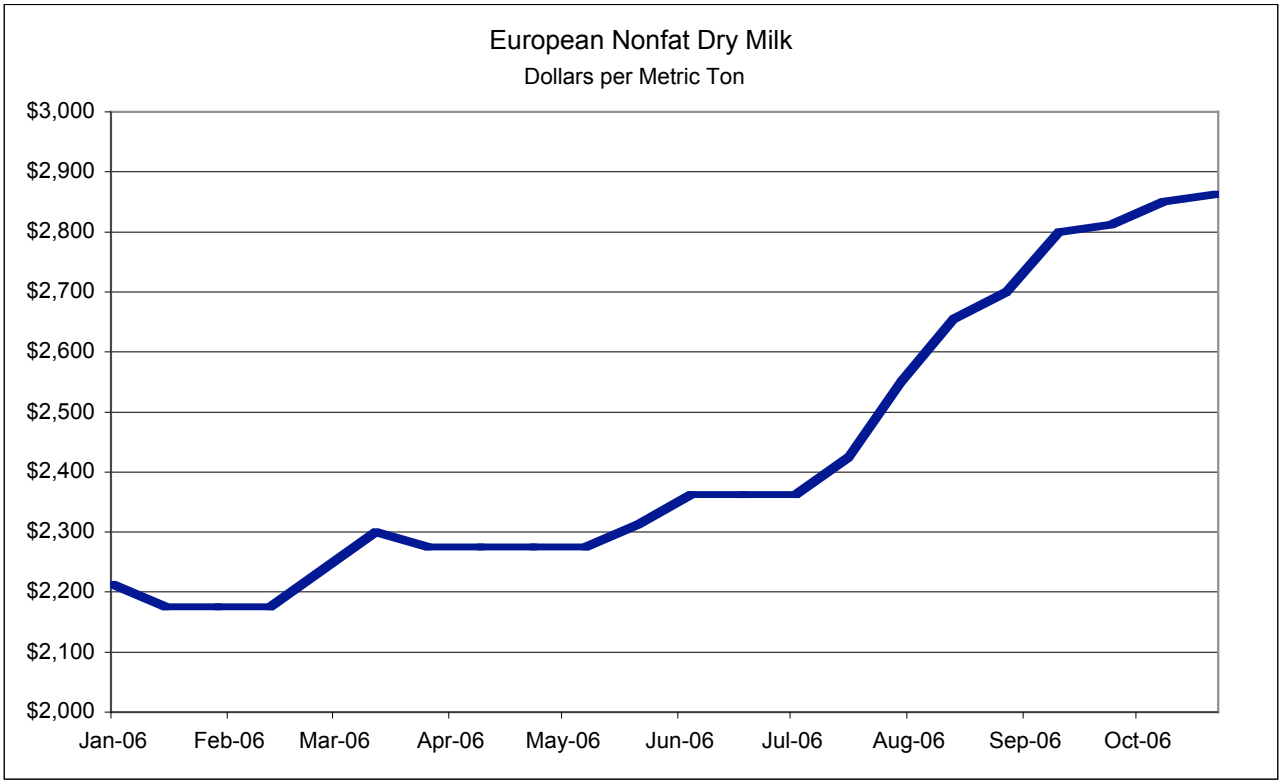
Source: NRA; Values Greater than 100 = Expansion; Values Less than 100 = Contraction

It remains to be seen what the November elections will mean to the economy. Wall Street seemed to like the outcome and rewarded investors with a substantial uptick in the Dow-Jones average. But prior to this good news, consumer confidence in the economy has struggled with energy costs, mortgage interest rates and concerns about employment. One of the most powerful ways that consumers' confidence in the economy impacts dairy product consumption is in out-of-home eating. The restaurant performance index, as a measure of out-of-home eating, has been trending downward since the second quarter of 2004 and hasn't shown many signs of rebounding in the year ahead.

Not all is gloom. In fact, for all our increased production, stocks of dairy products are very manageable or even tight. This is particularly true for nonfat dry milk. Nonfat dry milk is often thought to be one of residual claimants of the milk supply—when all other dairy products have the milk solids-not-fat that they need, the remainder is processed into storable products. Overall, U.S. nonfat dry milk production is above year earlier levels. California is the largest producer of nonfat dry milk and the extreme heat in July, 2006 put a sizable, if temporary, dent in their milk production.

The heat that hit California has also been a problem for Australia. An El Niño has been forming in the Pacific and the early stages of this weather phenomenon usually brings drought to Oceania. Australia's hay and feed grain prices are 150 percent higher than recent years and milk production has been off by more almost 15 percent. Also, the European Union policy reforms have reduced subsidies for export of milk powders and their output is down by about 10 percent as well. Together, world supplies of milk powders are considerably tight.

It is also true that the U.S. dollar has weakened against most foreign currencies. Over the past 5 years the dollar has declined about 25 percent relative to our trading partners. This is not good for imports, but it really helps make U.S. goods look like an excellent buy to foreign countries. This year, domestic prices of nonfat dry milk and skim milk powders have benefited from tight world supplies and a weak U.S. dollars. Prices of nonfat dry milk on the Chicago Mercantile Exchange are nearly double what they were a few months ago.



Dairy Policy

2007 is a Farm Bill year. A year ago many folks, including myself, were thinking that the 2007 Farm Bill might look very different than previous policy. There was an expectation that the World Trade Organization (WTO) talks would yield significant commitments from trading partners to further reduce subsidies and limit tariffs on imported goods. The way the WTO categorizes questionable trade distorting policies is by placing them in what is called the "amber box". Dairy policy, specifically the price support program, is the largest contributor to programs in the U.S. amber box. This has more to do with the way those distortions are measured than with actual distortions, but I was fairly sure that the U.S. dairy industry would be losing the venerable price support program. However, WTO trade talks have broken down and it doesn't appear as though they will be resumed in the near future. So, we have to look to the changing face of Washington, DC to imagine what a Farm Bill will contain.

Most of the time, authorship of the Farm Bill begins in the House of Representatives. The new chair of the House Agriculture Committee will be Collin Peterson from Minnesota. Mr. Peterson has been a big proponent of the Milk Income Loss Contracts (MILC) and would presumable like to see that program renewed. He also has indicated in the past year, as the ranking minority member, that he would like to have an extension of the current Farm Bill when it expires. This suggests something very much like status quo.

It may be the case that as chair of the House Agriculture Committee, Mr. Peterson would aspire to a more ambitious Farm Bill. However, budget pressures may make it difficult to even keep the current programs in place. I doubt that the Farm Bill will be much different than the current one.

Federal Milk Marketing Orders can expect to see some changes. At the time of this writing, USDA had just issued a tentative final decision to amend the manufacturing (make) allowances contained in the Class III and Class IV product price formulas in all Federal milk marketing orders. The make allowance would be increased to $0.1682 per pound of cheese; $0.1202 per pound of butter; $.1570 per pound of nonfat dry milk ; and $0.1956 per pound of whey. The initial impact on producer prices would be about -$0.22 per hundredweight.

The USDA also announced a Class I & II hearing for December 11 and they have accepted proposals to consider a much more complete look at product price formulas at a date yet to be announced.

Summary

2007 will be a recovery year for milk prices. I am forecasting the class III milk price to be up by about $1.80. Feed and energy related expenses will still be high and the milk check will not quite restore incomes to the levels that we had in 2004 and 2005 but it is a nice recovery. There is always uncertainty in forecasting but I think that there is more upside potential than downside in the year ahead. 2007 could be a year of significant prices increases if milk supplies tighten or export markets expand even more. I think that my forecast price is conservative.

Table 6-2. National Farm Prices for Milk; CCC Purchase, Wholesale, and Retail Prices for Cheddar Cheese, Butter, and Nonfat Dry Milk; and Selected Retail Price Indices, 1997–2006.

	1997	1998	1999	2000	2001	2002	2003	2004	2005[a]	2006[b]
Farm Milk ($/cwt.)										
All Milk (ave. fat)	13.34	15.50	14.38	12.40	15.05	12.11	12.53	16.06	15.14	12.80
Class III (3.5%)	12.05	14.20	12.43	9.74	13.10	10.42	11.42	15.39	14.05	11.70
Support (3.5%)	10.10	9.95	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80
Milk Price: Feed Price Value	2.38	3.34	3.59	3.05	3.39	2.60	2.61	3.10	3.24	2.58
MILC payments[c]	0.00	0.00	0.00	0.00	0.06	1.21	1.09	0.22	0.04	0.61
Cheddar Cheese, Blocks ($/lb.)										
CCC Purchase	1.130	1.115	1.100	1.122	1.131	1.131	1.131	1.131	1.131	1.131
Wholesale, NCE/Chicago Mercantile Exchange	1.308	1.569	1.404	1.149	1.439	1.182	1.317	1.649	1.492	1.226
Butter ($/lb.)										
CCC Purchase, Grade A or higher, Chicago	0.650	0.650	0.650	0.668	0.855	0.855	1.050	1.050	1.050	1.050
Wholesale, Gr. AA, Chicago Merc. Exchange	1.159	1.769	1.229	1.177	1.663	1.106	1.145	1.817	1.549	1.234
Nonfat Dry Milk										
CCC Purchase, Unfortified ($/lb.)	1.047	1.028	1.010	1.010	0.900	0.900	0.800	0.800	0.800	0.800
Wholesale, Central States	1.100	*1.069	1.031	1.015	1.004	0.928	0.838	0.858	0.985	0.955
Retail Price Indices (1982–84=100.0)										
Whole Milk	142.9	147.9	156.2	156.9	165.9	162.1	162.5	183.4	184.9	181.9
Cheese	147.7	152.3	162.6	162.8	167.6	170.0	169.4	180.8	183.3	181.6
All Dairy Products	145.5	150.8	159.6	160.7	167.1	168.1	167.9	180.2	182.4	181.8
All Food	157.7	161.1	164.6	168.4	173.6	176.8	180.5	186.6	191.2	195.8
All Consumer Prices	160.5	163.0	166.6	172.2	177.1	179.9	184.0	188.9	195.3	201.9

Source: Dairy Situation and Outlook, Dairy Market News, and Federal Milk Order Market Statistics, U.S. Department of Agriculture.

[a] Revised.

[b] Estimated by Mark Stephenson.

[c] Milk Income Loss Contract payments began in October of 2001 and are scheduled to end in September of 2005.

The Northeast Dairy Situation and Outlook

Number of Producers by State
Northeast Federal Milk Marketing Order

	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Total
ME	375	373	372	367	366	365	363	360	361	360	359	358	4,379
MD	570	570	568	573	560	561	567	568	569	567	565	556	6,794
NJ	117	116	114	113	111	111	111	112	113	113	112	113	1,356
NY	**5,639**	**5,642**	**5,640**	**5,676**	**5,627**	**5,638**	**5,630**	**5,684**	**5,501**	**5,486**	**5,477**	**5,490**	**67,130**
PA	6,400	6,228	6,231	6,217	6,341	6,226	6,230	6,142	6,232	6,227	6,197	6,189	74,860
VT	1,237	1,234	1,224	1,215	1,209	1,194	1,193	1,183	1,183	1,183	1,180	1,178	14,413
VA	142	195	196	179	183	158	167	183	169	189	116	152	2,029
Other Regional*	507	502	500	502	510	507	507	508	505	502	495	485	6,030
Other States**	169	161	166	167	166	163	165	166	131	135	135	136	1,860
Total	15,156	15,021	15,011	15,009	15,073	14,923	14,933	14,906	14,764	14,762	14,636	14,657	178,851

* Includes data for the states of Connecticut, Massachusetts, New Hampshire, and Rhode Island.

** Represents restricted data for the states of Delaware, Michigan, Nevada, Ohio, Utah, West Virginia, and Wisconsin.

Source: Northeast Monthly Federal Milk Order Market Statistics .

Dairy producer numbers have declined for many years as remaining farms have become larger. The Northeast is about 8 billion pounds of milk net deficit in total production. This can make pooling milk on this order attractive to distant producers. Producers from states as far away as Ohio, Michigan, Delaware, West Virginia, and even Utah and Nevada have pooled milk on this order.

Average Daily Output per Farm by State, Pounds
Northeast Federal Milk Marketing Order

	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Average
ME	4,273	4,270	4,273	4,476	4,595	4,601	4,514	4,492	4,361	4,247	4,161	-392	3,989
MD	4,686	5,203	5,034	5,205	5,562	4,965	4,547	4,369	4,549	4,582	4,681	-444	4,412
NJ	4,204	4,401	4,513	4,584	4,770	4,551	4,311	4,085	4,046	4,051	4,135	-385	3,939
NY	**4,880**	**4,667**	**4,732**	**4,800**	**4,977**	**4,909**	**4,780**	**5,163**	**4,746**	**4,692**	**4,680**	**-451**	**4,381**
PA	3,346	3,530	3,596	3,716	3,786	3,647	3,488	3,425	3,340	3,323	3,355	-317	3,186
VT	5,754	5,852	5,953	6,132	6,281	6,195	5,986	5,991	5,863	5,771	5,805	-554	5,419
VA	4,140	3,681	3,560	3,879	4,167	4,247	3,607	3,632	4,047	3,564	3,487	-267	3,479
Other Regional*	5,174	5,296	5,331	5,433	5,459	5,275	5,043	4,925	4,867	4,818	4,945	-482	4,674
Other States**	3,049	3,469	3,337	3,588	3,754	2,922	3,016	3,273	3,797	3,697	3,737	-352	3,107
Average	4,390	4,485	4,481	4,646	4,817	4,590	4,366	4,373	4,402	4,305	4,332	-405	4,065

* Represents restricted data for the states of Connecticut, Massachusetts, New Hampshire, and Rhode Island

** Represents restricted data for the states of Idaho, Michigan, Minnesota, Nevada, Utah, and Wisconsin.

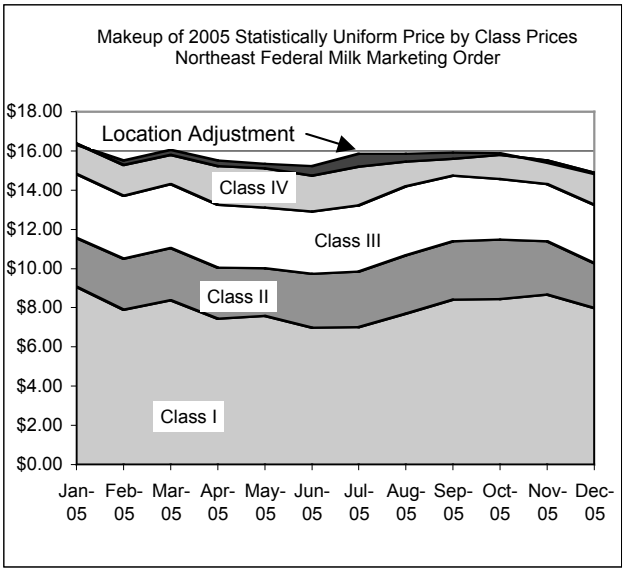
Source: Northeast Monthly Federal Milk Order Market Statistics .

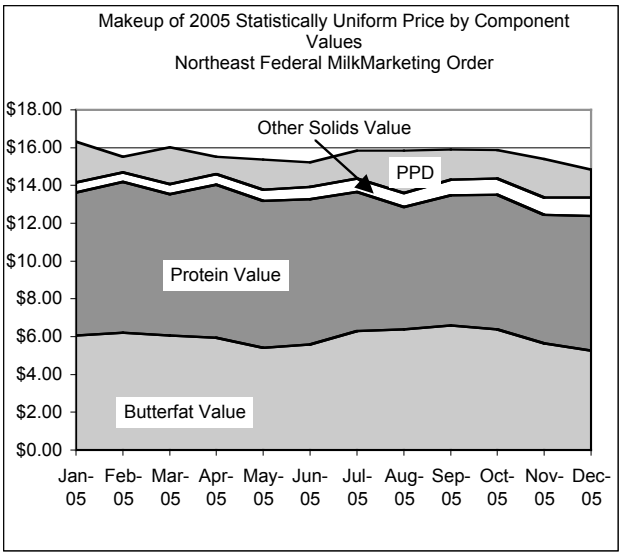
Class Utilization and Prices
Northeast Federal Milk Marketing Order

	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05
Class I Utilization	45.6%	46.4%	44.8%	42.8%	42.1%	41.4%	41.0%	43.5%	49.6%	48.2%	48.7%	47.4%
Class II Utilization	18.9%	19.3%	20.2%	19.6%	19.0%	21.1%	20.5%	21.4%	20.9%	21.2%	20.0%	17.4%
Class III Utilization	23.1%	22.0%	23.1%	21.9%	22.4%	22.7%	23.5%	25.8%	23.4%	21.5%	21.9%	22.3%
Class IV Utilization	12.3%	12.3%	11.8%	15.6%	16.5%	14.8%	15.1%	9.2%	6.2%	9.1%	9.4%	12.9%
Class I Price	$19.90	$17.04	$18.68	$17.38	$18.05	$16.87	$17.14	$17.69	$16.95	$17.52	$17.81	$16.82
Class II Price	$13.04	$13.36	$13.25	$13.24	$12.78	$13.06	$13.79	$13.95	$14.35	$14.25	$13.49	$13.22
Class III Price	$14.14	$14.70	$14.08	$14.61	$13.77	$13.92	$14.35	$13.60	$14.30	$14.35	$13.35	$13.37
Class IV Price	$12.52	$12.74	$12.66	$12.61	$12.20	$12.33	$13.17	$13.44	$13.75	$13.61	$12.90	$12.57
Butterfat Price	$1.73	$1.78	$1.73	$1.70	$1.55	$1.59	$1.80	$1.82	$1.89	$1.83	$1.61	$1.50
Protein Price	$2.53	$2.66	$2.50	$2.71	$2.60	$2.57	$2.46	$2.16	$2.30	$2.38	$2.27	$2.38
Other Solids Price	$0.09	$0.09	$0.10	$0.10	$0.10	$0.11	$0.12	$0.13	$0.14	$0.15	$0.16	$0.17
PPD	$2.17	$0.81	$1.96	$0.91	$1.58	$1.31	$1.50	$2.24	$1.62	$1.53	$2.06	$1.46

Source: Northeast Monthly Federal Milk Order Market Statistics .

The graphs below are created from the data above. They illustrate the where the money in the Northeast Federal Order pool is coming from and how it is being paid out. The first graph shows the contribution of processors from the four classes of milk to the pool. The second graph shows the disbursement of the pool dollars to producers in component values and the Producer Price Differential. You can see from the chart that when class III prices are falling, the PPD will become larger. The opposite is true when prices are rising.





MILK PRICE PROJECTIONS*
Northeast Federal Order Blend Price
3.5 Percent, Suffolk County, Massachusetts
Last Quarter 2005-2006, Four Quarters 2006-2007

Month	2005	2006	Difference
	(dollars per hundredweight)		
October	15.88	14.04	-1.84
November	15.41	14.34 [a]	-1.07
December	14.83	14.42 [a]	-0.41
Fourth Quarter Average	15.37	14.27 [a]	-1.11
Annual Average	***15.64***	***13.57*** [a]	***-2.07***

Month	2006	2007 [a]	Difference
	(dollars per hundredweight)		
January	14.78	14.53	-0.25
February	14.25	14.47	0.22
March	13.43	14.31	0.88
First Quarter Average	14.15	14.44	0.28
April	12.64	14.50	1.86
May	12.61	14.78	2.17
June	12.66	14.78	2.12
Second Quarter Average	12.64	14.69	2.05
July	12.79	15.25	2.46
August	13.06	15.38	2.32
September	13.80	15.46	1.66
Third Quarter Average	13.22	15.36	2.15
October	14.04	15.25	1.21
November	14.34 [a]	14.94	0.60
December	14.42 [a]	14.89	0.47
Fourth Quarter Average	14.27 [a]	15.03	0.76
Annual Average	***13.57*** [a]	***14.88*** [a]	***1.31***

* Averages may not add due to rounding.

[a] Projected.

Chapter 7. Dairy -- Farm Management

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Herd Size Comparisons

Data from the 225 New York dairy farms that participated in the Dairy Farm Business Summary (DFBS) Project in 2005 have been sorted into eight herd size categories and averages for the farms in each category are presented in Tables 7-1 and 7-2. Note that after the less than 50 cow category, the herd size categories increase by 25 cows up to 100 cows, by 100 cows up to 400 cows, and by 200 cows up to 600 cows.

As herd size increases, the net farm income increases (Table 7-1). Net farm income without appreciation averaged $23,042 per farm for the less than 50 cow farms and $566,457 per farm for those with more than 600 cows. Labor and management income per operator and the return to all capital without appreciation generally increases as herd size increases.

It is more than size of herd that determines profitability on dairy farms. Farms with 600 and more cows averaged $526 net farm income per cow while the less than 50 cow dairy farms averaged $598 net farm income per cow. The 400 to 599 herd size category had the highest net farm income per cow at $612, while the 300 to 399 herd size category had the second highest net farm income per cow at $600. Other factors that affect profitability and their relationship to the size classifications are shown in Table 7-2.

TABLE 7-1. COWS PER FARM AND FARM FAMILY INCOME MEASURES
225 New York Dairy Farms, 2005

Number of Cows	Number of Farms	Average Number of Cows	Net Farm Income without Appreciation	Net Farm Income per Cow	Labor & Management Income per Operator	Return to all Capital without Appreciation
Under 50	20	39	$23,042	$598	$-261	-1.5%
50 to 74	29	61	35,091	576	3,679	0.0%
75 to 99	23	85	41,799	493	1,631	1.0%
100 to 199	49	140	72,104	514	10,640	2.7%
200 to 299	19	254	141,458	557	48,882	6.1%
300 to 399	19	346	207,955	600	65,950	7.2%
400 to 599	30	500	305,701	612	107,108	8.6%
600 & over	36	1,078	566,457	526	176,987	8.1%

This year, net farm income per cow did not exhibit the usual increase as herd size increased. All herd size categories saw a decrease in operating cost of producing milk from a year earlier (Table 7-2). Net farm income per cow will increase as farms become larger if the costs of increased purchased inputs are offset by greater and more efficient output.

The farms with more than 600 cows averaged more milk sold per cow than any other size category (Table 7-2). With 24,402 pounds of milk sold per cow, farms in the largest herd size group averaged 21 percent more milk output per cow than the average of all herds in the summary with less than 600 cows.

Note: All data in this section are from the New York Dairy Farm Business Summary and Analysis Project unless a specific source is specified. Publications reporting Dairy Farm Business Summary data for New York, six regions of the state, for large herds, small herds, grazing farms, and farms that rent are available from the Department of Applied Economics and Management website: http://aem.cornell.edu .

The ability to reach high levels of milk output per cow with large herds is a major key to high profitability. Three times a day milking (3X) and supplementing with bST are herd management practices commonly used to increase milk output per cow in large herds. Many dairy farmers who have been willing and able to employ and manage the labor required to milk 3X have been successful. Only three percent of the 72 DFBS farms with less than 100 cows used a milking frequency greater than 2X. As herd size increased, the percent of herds using a higher milking frequency increased. Farms with 100 to 200 cows reported 10 percent of the herds milking more often than 2X, the 200-299 cow herds reported 26 percent, 300-399 cow herds reported 68 percent, 400-599 cow herds reported 70 percent, and the 600 cow and larger herds reported 86 percent exceeding the 2X milking frequency.

TABLE 7-2. COWS PER FARM AND RELATED FARM FACTORS
225 New York Dairy Farms, 2005

Number of Cows	Average Number of Cows	Milk Sold Per Cow (lbs.)	Milk Sold Per Worker (cwt.)	Till-able Acres Per Cow	Forage DM Per Cow (tons)	Farm Capital Per Cow	Cost of Producing Milk/Cwt.	
							Operating	Total
Under 50	39	18,028	3,840	4.2	6.5	$11,172	$11.01	$20.01
50 to 74	61	18,700	5,086	3.6	8.1	9,698	11.35	18.43
75 to 99	85	17,949	5,687	3.3	8.6	9,604	12.03	18.08
100 to 199	140	19,974	7,032	2.9	8.8	9,578	11.99	17.33
200 to 299	254	21,447	9,238	2.6	8.3	7,487	12.07	15.78
300 to 399	346	22,741	8,384	2.2	8.7	7,534	12.08	15.47
400 to 599	500	22,782	9,524	2.4	8.7	7,007	12.06	15.03
600 & over	1,078	24,402	11,360	1.8	7.9	7,055	12.46	15.02

Bovine somatotropin (bST) was used to a greater extent on the large herd farms. bST was used consistently during 2005 on 15 percent of the herds with less than 100 cows, 34 percent of the farms with 100 to 299 cows and on 69 percent of the farms with 300 cows and more.

Milk output per worker has always shown a strong correlation with net farm income. In 2005, this relationship also held when labor and management income was the profit measure compared. The farms with 100 cows or more averaged over 910,700 pounds of milk sold per worker while the farms with less than 100 cows averaged less than 487,100 pounds per worker.

In achieving the highest productivity per cow and per worker, the largest farms had the fewest crop acres per cow and below average forage dry matter harvested per cow. However, the larger farms generally purchased more roughage per cow. The farms with 400 to 599 cows had the most efficient use of farm capital with an average investment of $7,007 per cow.

The 36 farms with more than 600 cows held their average total costs of producing milk to $15.02 per hundredweight, $2.14 below the $17.16 average for the remaining 189 dairy farms. The lower average costs of production plus a similar milk price gave the managers of the largest dairy farms profit margins (milk price less total cost of producing milk) that averaged $2.02 per hundredweight above the average of the other 189 DFBS farms.

Ten-Year Comparisons

The total cost of producing milk on DFBS farms has increased $0.37 per hundredweight over the past 10 years (Table 7-3). In the intervening years, total cost of production decreased 1997 through 1999, increased in 2000 and 2001, fell in 2002, again increased in 2003 and 2004, then decreased in 2005. Over the past 10 years both milk sold per cow and cows per worker have increased 14 percent on DFBS farms (Table 7-4). Farm net worth has increased significantly, while percent equity has been fairly stable.

TABLE 7-3. TEN YEAR COMPARISON: AVERAGE COST OF PRODUCING MILK PER HUNDREDWEIGHT
New York Dairy Farms, 1996 to 2005

Item	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Operating Expenses										
Hired labor	$1.89	$1.97	$2.06	$2.14	$2.25	$2.41	$2.44	$2.51	$2.67	$2.66
Purchased feed	4.73	4.63	4.18	3.96	3.91	4.25	4.10	4.29	4.88	4.37
Machinery repair, vehicle expense and rent	1.02	.94	1.12	1.18	1.06	1.21	1.01	.91	1.09	1.07
Fuel, oil and grease	.31	.28	.25	.24	.34	.32	.28	.33	.41	.53
Replacement livestock	.19	.18	.24	.24	.23	.20	.16	.15	.16	.11
Breeding fees	.15	.15	.16	.17	.17	.19	.21	.19	.21	.22
Veterinary and medicine	.42	.41	.45	.47	.51	.54	.56	.56	.59	.62
Milk marketing	.59	.52	.53	.49	.69	.63	.65	.69	.72	.76
Other dairy expenses	.99	1.05	1.09	1.13	1.16	1.26	1.25	1.30	1.27	1.32
Fertilizer and lime	.32	.33	.35	.35	.29	.33	.27	.26	.30	.34
Seeds and plants	.20	.21	.22	.20	.19	.20	.20	.20	.24	.22
Spray and other crop expense	.21	.23	.24	.24	.22	.25	.22	.19	.20	.19
Land, building and fence repair	.23	.19	.27	.27	.21	.26	.19	.14	.21	.25
Taxes	.26	.23	.21	.21	.20	.21	.20	.21	.22	.23
Insurance	.18	.16	.17	.16	.16	.14	.16	.15	.16	.16
Utilities (farm share)	.39	.35	.32	.31	.32	.33	.34	.34	.36	.39
Interest paid	.91	.90	.89	.83	.95	.82	.61	.56	.57	.65
Miscellaneous (including rent)	.41	.38	.41	.44	.45	.42	.44	.40	.43	.37
Total Operating Expenses	$13.40	$13.12	$13.15	$13.02	$13.31	$13.98	$13.27	$13.39	$14.67	$14.54
Less: Nonmilk cash receipts	1.07	1.14	1.18	1.44	1.83	1.49	1.91	1.57	1.70	1.96
Increase in grown feed & supplies	.15	.07	.25	.25	0.11	0.10	0.12	0.27	0.17	0.12
Increase in livestock	.18	.15	.22	.11	0.06	0.52	0.23	0.09	0.22	0.21
OPERATING COST OF MILK PRODUCTION	$12.00	$11.76	$11.50	$11.22	$11.31	$11.87	$11.01	$11.46	$12.58	$12.25
Overhead Expenses										
Depreciation: machinery & buildings	$1.04	$0.95	$1.08	$1.14	$1.20	$1.30	$1.39	$1.23	$1.32	$1.32
Unpaid labor	.13	.13	.11	.11	.10	.10	.08	.10	.07	.06
Operator(s) labor [a]	.88	.79	.74	.80	.79	.74	.74	.70	.67	.61
Operator(s) management (5% of cash receipts)	.80	.73	.82	.83	.76	.87	.75	.73	.90	.90
Interest on farm equity capital (5%)	.94	.87	.85	.86	.88	.91	.89	.85	.92	1.02
Total Overhead Expenses	$3.79	$3.47	$3.60	$3.74	$3.73	$3.92	$3.85	$3.61	$3.88	$3.91
TOTAL COST OF MILK PRODUCTION	$15.79	$15.23	$15.10	$14.96	$15.04	$15.79	$14.86	$15.07	$16.46	$16.16
AVERAGE FARM PRICE OF MILK	$14.98	$13.65	$15.60	$14.91	$13.38	$15.98	$12.98	$13.24	$16.64	$15.98
Return per cwt. to operator labor, capital & mgmt.	$1.81	$0.81	$2.91	$2.44	$0.77	$2.71	$0.50	$0.45	$2.67	$2.35
Rate of return on farm equity capital	0.7%	-4.1%	8.0%	4.7%	-4.4%	6.0%	-5.6%	-5.7%	6.0%	4.1%

[a] 1996 = $1,500/month, 1997 = $1,550/month, 1998 = $1,600/month, 1999 = $1,800/month, 2000 = $1,900/month, 2001 = $2,000/month, 2002 = $2,100/month, and 2003 through 2005 = $2,200/month of operator labor.

TABLE 7-4. TEN YEAR COMPARISON: SELECTED BUSINESS FACTORS
New York Dairy Farms, 1996 to 2005

Item	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of farms	300	253	305	314	294	228	219	201	200	225
Cropping Program										
Total tillable acres	415	462	497	516	566	618	660	659	701	729
Tillable acres rented	183	207	232	234	262	290	337	323	345	365
Hay crop acres	198	219	239	248	274	302	323	321	339	361
Corn silage acres	120	156	175	186	192	210	232	233	245	246
Hay crop, tons DM/acre	2.8	2.5	3.1	2.9	3.3	2.8	3.1	3.2	3.5	3.2
Corn silage, tons/acre	15.9	16.1	18.0	16.3	15.1	16.5	15.4	17.2	17.7	18.8
Fert. & lime exp./tillable acre	$26	$28	$31	$32	$27	$32	$27	$28	$31	$33
Machinery cost/cow	$450	$429	$471	$502	$513	$554	$520	$497	$565	$624
Dairy Analysis										
Number of cows	167	190	210	224	246	277	297	314	334	340
Number of heifers	124	139	155	164	186	207	226	240	260	270
Milk sold, cwt.	33,504	39,309	43,954	47,932	52,871	60,290	66,177	70,105	73,767	78,250
Milk sold/cow, lbs.	20,113	20,651	20,900	21,439	21,516	21,762	22,312	22,302	22,070	22,998
Purchased dairy feed/cwt. milk	$4.73	$4.63	$4.18	$3.96	$3.91	$4.25	$4.10	$4.27	$4.86	$4.37
Purchased grain & concentrate as % of milk receipts	30%	33%	26%	25%	27%	25%	30%	30%	27%	26%
Purchased feed & crop expense/cwt. milk	$5.46	$5.39	$5.00	$4.75	$4.61	$5.03	$4.79	$4.92	$5.60	$5.12
Capital Efficiency										
Farm capital/cow	$6,218	$6,196	$6,161	$6,368	$6,535	$6,755	$6,794	$6,748	$7,010	$7,508
Real estate/cow	$2,701	$2,650	$2,537	$2,562	$2,615	$2,713	$2,612	$2,722	$2,809	$2,950
Mach. invest./cow	$1,107	$1,108	$1,118	$1,163	$1,225	$1,222	$1,261	$1,208	$1,226	$1,314
Asset turnover ratio	0.55	0.52	0.61	0.59	0.54	0.63	0.53	0.54	0.64	0.60
Labor Efficiency										
Worker equivalent	4.48	5.01	5.35	5.71	6.11	6.72	7.21	7.50	7.97	8.18
Operator/manager equivalent	1.56	1.60	1.62	1.76	1.83	1.94	1.82	1.86	1.64	1.60
Milk sold/worker, lbs.	747,861	784,604	821,565	839,432	865,325	897,167	917,854	934,733	925,553	956,698
Cows/worker	37	38	39	39	40	41	41	42	42	42
Labor cost/cow	$582	$598	$609	$653	$674	$706	$725	$738	$752	$765
Hired labor expense/hired worker equivalent	$24,395	$25,241	$31,092	$27,910	$29,309	$31,448	$31,755	$32,659	$33,311	$33,539
Profitability & Financial Analysis										
Labor & mgmt. income/operator	$18,651	$-1,424	$55,917	$42,942	$-2,908	$45,479	$-14,243	$-15,360	$78,061	$64,745
Farm net worth, end year	$648,186	$685,665	$798,297	$865,626	$942,881	$1,181,055	$1,173,836	$1,207,964	$1,466,674	$1,690,427
Percent equity	61%	57%	59%	58%	57%	60%	57%	56%	60%	63%

Milk Cow Operations and Milk Cow Inventory

TABLE 7-5. NUMBER OF DAIRY FARMS AND MILK COWS BY SIZE OF HERD
New York State, 2005 [a, b]

Size of Herd	Farms		Milk Cows	
Number of Cows	Number	% of Total	Number	% of Total
1 - 29	1,400	20.9%	13,000	2.0%
30-49	1,300	19.4%	49,000	7.5%
50-99	2,500	37.3%	165,000	25.5%
100-199	890	13.3%	120,000	18.5%
200-399	340	5.0%	82,000	12.7%
400-699	160	2.4%	88,000	13.6%
700-999	60	0.9%	51,000	7.8%
1000-1499	30	0.5%	36,000	5.6%
1500 or more	20	0.3%	44,000	6.8%
Total	6,700	100.0%	648,000	100.0%

[a]This information on number of farms and number of cows by size of herd is derived from several sources:
- Dairy Statistics as published by the New York Agricultural Statistics Services for 2005.
- CAFO (Concentrated Animal Feeding Operations) permit reports for 2005. About 60 small CAFO farms (farms with 200 to 700 milk cows) have not applied for or updated the permit. Estimates for these farms were made so as to reflect the total number of dairy farms in New York State.

[b] The author wishes to thank everyone who provided some data as well as providing valuable advice and perspectives: Lee Telega, Wayne Knoblauch, Jason Karszes and B. F. Stanton. However, any errors, omissions or misstatements are solely the responsibility of the author, Professor George Conneman, **e-mail gjc4@cornell.edu**.

In 2005, there were 6,700 dairy farms in New York State, and 648,000 milk cows as reported by the NYASS. The table above was prepared based on the NYASS data plus the CAFO permit filing for additional herd size categories.

Ninety-one percent of the farms (less than 200 cows per farm) had 54 percent of the milk cows. The remaining nine percent of the farms had nearly 46 percent of the cows. About 1.7 percent of the farms (those with 700 or more cows) had 20 percent of the cows. Farms with over 200 cows represented nearly 9 percent of total herds and had 46 percent of the total cows.

Farms with less than 50 cows represent 40 percent of all farms.

TABLE 7-6. NUMBER OF DAIRY FARMS AND MILK COWS BY SIZE OF HERD NEW YORK STATE, 1985 TO 2005

Size of Herd	1985 Farms		1985 Cows		1995 Farms		1995 Cows		2005 Farms		2005 Cows	
Number of cows	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1 – 29	5,000	30.3	58,000	6.2	2,100	21.0	21,000	3.0	1,400	20.9	13,000	2.0
30 – 49	4,550	27.6	210,000	22.3	2,200	22.0	92,000	13.0	1,300	19.4	49,000	7.5
50 – 99	5,100	30.9	382,000	40.5	4,000	40.0	277,000	39.0	2,500	37.3	165,000	25.5
100 – 199	1,550	9.4	230,000	24.4	1,300	13.0	178,000	25.0	890	13.3	120,000	18.5
200 +	300	1.8	62,000	6.6	400	4.0	142,000	20.0	610	9.1	301,000	46.5
Total	16,500	100%	942,000	100%	10,000	100%	710,000	100%	6,700	100%	648,000	100%
Average Size of Herd (cows)			57				71				97	

SOURCE: New York Agricultural Statistical Services.

Between 1985 and 2005 (a 20-year period) the number of dairy farms in New York decreased by 9,800 farms. Thus 59 percent of the farms that were producing milk in 1985 were not in dairying in 2005. The decline was much higher among smaller farms. Farms with less than 50 cows declined by 72 percent over the 20-year period. Farms with 200 cows or more grew in number from 300 to 610 farms during that period.

In 1985 farms with 200 cows or more represented less than two percent of all farms; in 2005, farms with 200 or more cows made up over nine percent of the total number of dairy farms.

The average size of herds was 57 cows per farm in 1985 and 97 cows per farm in 2005.

The concentration of farms in larger herds also increased since 1985. Roughly seven percent of the cows were kept in herds with 200 or more cows in 1985; herds with 200 or more cows had nearly 47 percent of the total number of cows in 2005.

Prices Paid by New York Dairy Farmers and Values of Inventory Items

The prices dairy farmers pay for a given quantity of goods and services has a major influence on farm production costs. The astute manager will keep close watch on unit costs and utilize the most economical goods and services. The table below shows average prices of selected goods and services used on New York dairy farms.

TABLE 7-7. PRICES PAID BY NEW YORK FARMERS FOR SELECTED ITEMS, 1994 - 2005

Year	Mixed Dairy Feed 16% Protein[a]	Fertilizer, Urea 45-46%N[a]	Seed Corn, Hybrid[b]	Diesel Fuel[a]	Tractor 50-59 PTO[b]	Wage Rate All Hired Farm Workers[c]
	($/ton)	($/ton)	($/80,000 Kernels)	($/gallon)	($)	($/hour)
1994	181	233	73.40	0.853	19,800	6.96
1995	175	316	77.10	0.850	20,100	6.92
1996	226	328	77.70	1.020	20,600	7.19
1997	216	287	83.50	0.960	21,200	7.63
1998	199	221	86.90	0.810	21,800	7.63
1999	175	180	88.10	0.750	21,900	8.12
2000	174	201	87.50	1.270	21,800	8.74
2001	176	270	92.20	1.260	22,000	8.72
2002	178	232	92.00	1.028	21,900	9.26
2003	194	283	102.00	1.516	21,300	9.93
2004	207	299	105.00	1.400	21,500	9.96
2005	190	365	111.00	2.020	23,400	9.88

SOURCE: NYASS, New York Agricultural Statistics. USDA, NASS, Agricultural Prices.
[a]Northeast region average. [b]United States average. [c]New York and New England combined.

Inflation, farm profitability, supply and demand all have a direct impact on the inventory values on New York dairy farms. The table below shows year-end (December) prices paid for dairy cows (replacements), an index of these cow prices, an index of new machinery prices (U.S. average), the average per acre value of farmland and buildings reported in January, and an index of the real estate prices.

TABLE 7-8. VALUES AND INDICES OF NEW YORK DAIRY FARM INVENTORY ITEMS, 1991 - 2005

	Dairy Cows		Machinery[a]	Farm Real Estate[b]	
Year	Value/Head	1977=100	1977=100	Value/Acre	1977=100
1991	1,040	210	219	1,095	187
1992	1,090	220	226	1,139	194
1993	1,100	222	235	1,237	211
1994	1,100	222	249	1,260	215
1995	1,010	204	258	1,280	218
1996	1,030	208	268	1,260	215
1997	980	198	276	1,250	213
1998	1,050	212	286	1,280	218
1999	1,250	253	294	1,340	228
2000	1,250	253	301	1,430	244
2001	1,600	323	312	1,520	259
2002	1,400	283	320	1,610	274
2003	1,300	263	325	1,700	290
2004	1,580	319	351	1,780	303
2005	1,690	341	373	1,880	320

SOURCE: NYASS, New York Agricultural Statistics and New York Crop and Livestock Report. USDA, ASB, Agricultural Prices.
[a]United States average; 1995 - 2005 are estimated due to discontinuation of 1977=100 series.
[b]New York average for 2000 – 2005 excludes Native American reservation land.

TABLE 7-9. COMPARISON OF FARM BUSINESS SUMMARY DATA
Same 61 New York Dairy Farms, 1996- 2005

Selected Factors	1996	1997	1998	1999
Milk receipts per cwt. milk	$15.05	$13.75	$15.71	$15.22
Size of Business				
Average number of cows	255	271	290	307
Average number of heifers	184	201	223	229
Milk sold, cwt.	54,398	59,423	63,265	69,290
Worker equivalent	6.45	6.83	7.18	7.51
Total tillable acres	578	608	636	666
Rates of Production				
Milk sold per cow, lbs.	21,364	21,923	21,822	22,568
Hay DM per acre, tons	3.0	2.7	3.4	3.2
Corn silage per acre, tons	16	16	21	17
Labor Efficiency				
Cows per worker	39	40	40	41
Milk sold per worker, lbs.	843,165	870,133	881,639	922,427
Cost Control				
Grain & concentrate purchased as % of milk sales	30%	31%	25%	24%
Dairy feed & crop expense per cwt. milk	$5.33	$5.31	$5.00	$4.69
Operating cost of producing cwt. milk	$11.94	$11.65	$11.49	$11.17
Total cost of producing cwt. milk	$14.69	$14.25	$14.35	$14.08
Hired labor cost per cwt.	$2.21	$2.14	$2.27	$2.37
Interest paid per cwt.	$0.81	$0.85	$0.84	$0.73
Labor & machinery costs per cow	$1,073	$1,038	$1,122	$1,204
Replacement livestock expense	$10,970	$12,675	$15,027	$15,420
Expansion livestock expense	$15,944	$16,259	$18,994	$16,639
Capital Efficiency				
Farm capital per cow	$5,636	$6,139	$6,269	$6,492
Machinery & equipment per cow	$1,075	$1,122	$1,190	$1,248
Real estate per cow	$2,358	$2,479	$2,426	$2,452
Livestock investment per cow	$1,490	$1,505	$1,517	$1,548
Asset turnover ratio	0.64	0.55	0.64	0.62
Profitability				
Net farm income without appreciation	$113,109	$69,634	$195,679	$198,574
Net farm income with appreciation	$126,843	$76,980	$239,548	$242,759
Labor & management income per operator/manager	$43,922	$11,887	$88,496	$83,018
Rate return on:				
Equity capital with appreciation	8.8%	2.7%	17.2%	15.2%
All capital with appreciation	8.0%	4.6%	13.0%	11.7%
All capital without appreciation	7.1%	4.2%	10.6%	9.5%
Financial Summary, End Year				
Farm net worth	$971,252	$982,136	$1,150,057	$1,260,017
Change in net worth with appreciation	$79,776	$16,493	$166,960	$122,041
Debt to asset ratio	0.40	0.42	0.40	0.39
Farm debt per cow	$2,119	$2,591	$2,560	$2,612

Farms participating in the DFBS each of the last 10 years have increased size of business, labor efficiency and milk sold per cow (Table 7-9). All measures of profitability exhibit wide variability from year-to-year and are highly correlated with milk price received.

TABLE 7-9. COMPARISON OF FARM BUSINESS SUMMARY DATA (Continued)
Same 61 New York Dairy Farms, 1996 - 2005

2000	2001	2002	2003	2004	2005
$13.39	$15.92	$12.95	$13.34	$16.59	$16.04
326	345	358	395	403	417
242	257	275	303	311	331
73,725	77,473	82,668	91,129	92,147	98,592
7.78	8.09	8.35	9.33	9.58	9.73
685	702	724	787	830	857
22,618	22,460	23,110	23,063	22,842	23,658
3.7	3.1	3.4	3.3	3.5	3.5
15	17	15	18	18	19
42	43	43	42	42	43
947,110	958,127	989,546	976,736	962,368	1,013,187
27%	25%	30%	31%	27%	27%
$4.55	$4.90	$4.78	$5.01	$5.58	$5.22
$11.33	$12.32	$11.14	$11.65	$12.56	$12.33
$14.23	$15.35	$14.11	$14.39	$15.40	$15.30
$2.43	$2.59	$2.65	$2.72	$2.80	$2.71
$0.88	$0.78	$0.58	$0.53	$0.55	$0.61
$1,225	$1,291	$1,295	$1,278	$1,342	$1,397
$19,072	$15,946	$13,302	$17,912	$16,670	$16,600
$35,386	$33,472	$13,711	$14,823	$18,137	$15,648
$6,580	$6,654	$6,780	$6,592	$6,888	$7,303
$1,282	$1,274	$1,294	$1,226	$1,259	$1,336
$2,430	$2,492	$2,529	$2,449	$2,549	$2,634
$1,607	$1,688	$1,781	$1,794	$1,865	$1,985
0.57	0.65	0.54	0.56	0.67	0.64
$64,276	$177,050	$36,421	$48,523	$257,469	$237,663
$110,602	$277,216	$86,125	$110,834	$376,776	$357,302
$-1,770	$61,798	$-21,508	$-19,397	$110,154	$87,433
3.8%	15.5%	1.6%	3.0%	19.0%	15.2%
5.3%	11.9%	2.9%	3.6%	13.0%	11.4%
3.1%	7.5%	0.9%	1.2%	8.7%	7.5%
$1,280,394	$1,462,029	$1,431,011	$1,508,973	$1,778,728	$2,022,213
$10,158	$179,055	$-19,692	$39,503	$300,090	$250,367
0.42	0.40	0.41	0.44	0.39	0.36
$2,659	$2,694	$2,795	$2,941	$2,765	$2,732

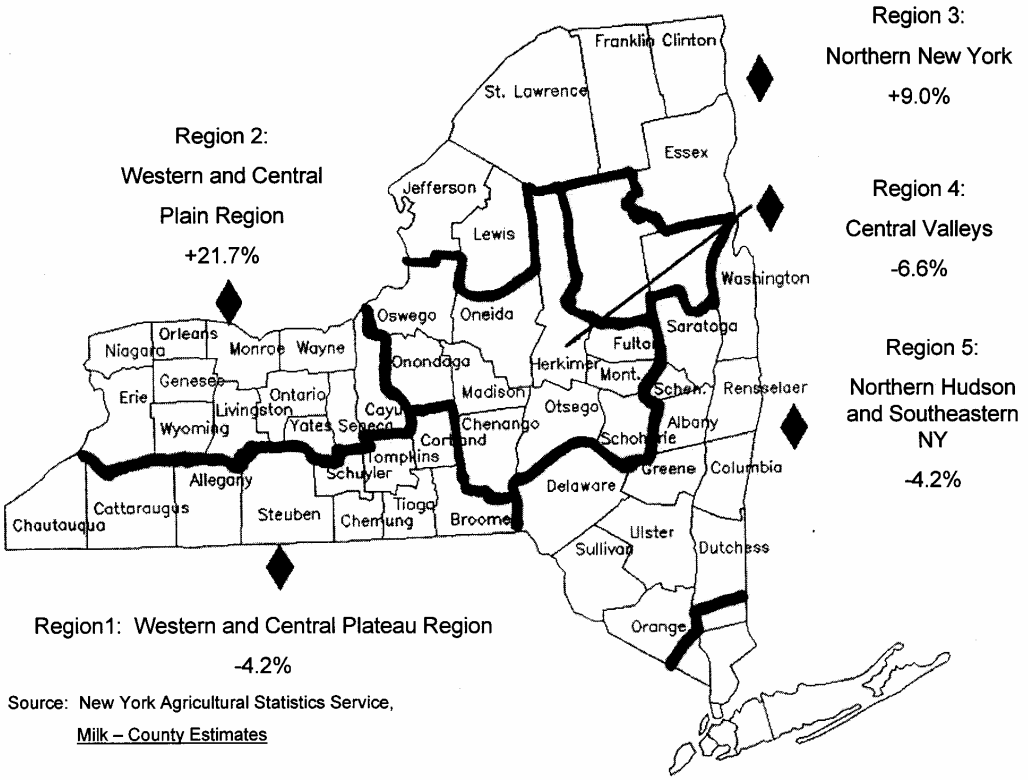
Debt to asset ratio and debt per cow have remained stable while farm net worth more than doubled. During this time, crop yields have fluctuated, largely due to weather. Purchased grain and concentrate as a percent of milk sales varied only from 24 to 31 percent, with the high in 1997 and 2003 and the low in 1999.

TABLE 7-10. COMPARISON OF DAIRY FARM BUSINESS DATA BY REGION
226 New York Dairy Farms, 2005

Item	Western & Central Plateau Region	Western & Central Plain Region	Northern New York	Central Valleys	Northern Hudson & South-eastern New York
Number of farms	38	66	33	24	65
ACCRUAL EXPENSES					
Hired labor	$79,437	$411,193	$181,887	$113,158	$121,373
Feed	158,121	623,536	328,274	192,571	222,149
Machinery	67,063	206,897	123,437	96,896	87,933
Livestock	91,692	427,970	242,424	141,503	155,109
Crops	29,165	102,435	47,507	41,667	42,996
Real estate	29,304	105,278	51,254	47,427	35,749
Other	50,308	203,672	99,700	67,811	62,950
Total Operating Expenses	$505,090	$2,080,981	$1,074,483	$701,033	$728,259
Expansion livestock	4,017	17,304	15,286	6,636	10,370
Extraordinary expense	1,088	426	2,591	0	858
Machinery depreciation	37,608	112,948	72,421	41,897	34,101
Building depreciation	19,458	70,354	44,043	38,948	16,231
Total Accrual Expenses	$567,261	$2,282,013	$1,208,824	$788,513	$789,819
ACCRUAL RECEIPTS					
Milk sales	$570,237	$2,277,293	$1,246,375	$782,422	$762,352
Livestock	49,162	200,679	110,406	62,263	70,338
Crops	1,433	43,363	33,995	27,109	4,584
Government receipts	15,650	64,179	32,336	23,865	27,457
All other	13,842	32,523	23,381	22,790	15,216
Total Accrual Receipts	$650,325	$2,618,037	$1,446,493	$918,450	$879,947
PROFITABILITY ANALYSIS					
Net farm income (w/o appreciation)	$83,064	$336,024	$237,669	$129,937	$90,128
Net farm income (w/ appreciation)	$127,391	$506,132	$361,378	$233,313	$144,771
Labor & management income	$33,500	$209,706	$157,281	$65,221	$21,666
Number of operators	1.48	1.67	1.60	1.61	1.60
Labor & mgmt. income/operator	$22,635	$125,572	$98,301	$40,510	$13,542
BUSINESS FACTORS					
Worker equivalent	4.37	13.28	7.86	5.72	6.20
Number of cows	163	611	339	222	209
Number of heifers	125	486	269	173	168
Acres of hay crops[a]	243	541	451	295	287
Acres of corn silage[a]	158	492	277	195	190
Total tillable acres	391	1,143	784	600	517
Pounds of milk sold	3,556,561	14,425,102	7,899,932	4,707,995	4,618,658
Pounds of milk sold/cow	21,774	23,625	23,297	21,207	22,125
Tons hay crop dry matter/acre	2.4	3.9	3.2	2.7	2.6
Tons corn silage/acre	15.4	19.2	20.7	17.3	18.3
Cows/worker	37	46	43	39	34
Pounds of milk sold/worker	814,014	1,086,364	1,005,187	822,477	744,945
% grain & conc. of milk receipts	27%	25%	25%	24%	29%
Feed & crop expense/cwt. milk	$5.26	$5.03	$4.75	$4.97	$5.74
Fertilizer & lime/crop acre	$31.43	$38.65	$22.29	$26.98	$35.00
Machinery cost/tillable acre	$299	$303	$278	$260	$268

[a]Excludes farms that do not harvest forages.

FIGURE 7-1. PERCENT CHANGE IN MILK PRODUCTION
Five Regions in New York, 1995-2005



Source: New York Agricultural Statistics Service, Milk – County Estimates

TABLE 7-11. MILK PRODUCTION & AVERAGE COST OF PRODUCING MILK
Five Regions of New York

Item	Region[a] 1	2	3	4	5
Milk Production[b]			(million pounds)		
1995	2,104.2	3,133.1	2,179.7	2,691.0	1,416.5
2005	2,016.0	3,814.5	2,376.5	2,513.5	1,357.5
Percent change	-4.2%	+21.7%	+9.0%	-6.6%	-4.2%
2005 Cost of Producing Milk[c]			($ per hundredweight milk)		
Operating cost	$12.06	$12.18	$11.26	$12.14	$13.45
Total cost	16.54	14.91	14.53	16.43	17.11
Average price received	16.03	15.79	15.78	16.62	16.51
Return per cwt. to operator labor, management & capital	$2.22	$2.30	$2.98	$2.69	$1.84

[a]See Figure 7-1 for region descriptions.
[b]Source: New York Agricultural Statistics Service, Milk-County Estimates.
[c] From Dairy Farm Business Summary data.

Farm Business Charts

The Farm Business Chart is a tool which can be used in analyzing a business by drawing a line through the figure in each column which represents the current level of management performance. The figure at the top of each column is the average of the top 10 percent of the 225 farms for that factor. The other figures in each column are the average for the second 10 percent, third 10 percent, etc. Each column of the chart is independent of the others. The farms which are in the top 10 percent for one factor would not necessarily be the same farms which make up the 10 percent for any other factor.

The cost control factors are ranked from low to high, but the lowest cost is not necessarily the most profitable. In some cases, the "best" management position is somewhere near the middle or average. Many things affect the level of costs, and must be taken into account when analyzing the factors.

TABLE 7-12. FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS
225 New York Dairy Farms, 2005

Size of Business			Rates of Production			Labor Efficiency	
Worker Equiv-alent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
27.7	1,307	32,162,089	26,498	5.5	25	58	1,302,355
15.8	665	15,991,194	24,611	4.3	22	50	1,109,493
11.6	472	10,679,945	23,635	3.7	20	44	1,024,936
8.2	339	7,462,166	22,761	3.4	20	42	914,742
5.7	231	4,952,606	22,049	2.9	18	38	806,982
4.3	147	2,981,822	21,086	2.6	18	35	721,745
3.4	115	2,169,047	19,706	2.2	17	33	654,421
2.7	82	1,457,785	18,465	2.0	16	30	571,531
2.2	61	1,101,729	16,584	1.6	14	26	478,273
1.5	40	688,227	13,540	1.1	11	20	336,661

Cost Control

Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
$470	16%	$354	$977	$651	$3.62
650	21	467	1,183	841	4.26
742	23	535	1,275	933	4.57
821	25	582	1,355	1,017	4.86
862	25	628	1,418	1,080	5.08
908	27	667	1,480	1,153	5.32
956	28	715	1,552	1,200	5.61
1,013	29	769	1,677	1,262	5.95
1,082	31	869	1,836	1,334	6.47
1,207	37	1,135	2,186	1,495	7.51

The next section of the Farm Business Chart provides for comparative analysis of the value and costs of dairy production.

The profitability section shows the variation in farm income by decile and enables a dairy farmer to determine where he or she ranks by using several measures of farm profitability. Remember that each column is independently established and the farms making up the top decile in the first column will not necessarily be on the top of any other column. The dairy farmer who ranks at or near the top of most of these columns is in a very enviable position.

TABLE 7-12. (CONTINUED) FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS
225 New York Dairy Farms, 2005

Milk Receipts Per Cow	Milk Receipts Per Cwt.	Operating Cost Milk Production Per Cow	Operating Cost Milk Production Per Cwt.	Total Cost Milk Production Per Cow	Total Cost Milk Prod. Per Cwt.
$4,288	$17.86	$1,434	$8.05	$2,566	$13.38
3,888	16.86	1,894	10.02	2,929	14.29
3,745	16.45	2,104	10.97	3,111	14.91
3,614	16.20	2,291	11.39	3,277	15.53
3,502	16.01	2,440	11.77	3,457	16.02
3,358	15.87	2,603	12.14	3,561	16.85
3,194	15.73	2,738	12.65	3,689	17.57
2,969	15.56	2,916	13.19	3,816	18.40
2,679	15.31	3,043	13.90	3,986	20.05
2,210	14.80	3,430	15.78	4,438	23.73

Profitability

Net Farm Income Without Appreciation			Net Farm Income With Appreciation		Labor & Management Income	
Total	Per Cow	Operations Ratio	Total	Per Cow	Per Farm	Per Operator
$838,892	$1,268	0.31	$1,268,115	$1,874	$606,471	$345,493
381,327	971	0.24	553,456	1,341	270,698	160,827
249,077	778	0.20	374,997	1,148	152,164	82,609
163,709	676	0.17	275,301	974	77,807	53,794
110,789	613	0.15	179,610	872	45,585	33,460
76,210	509	0.13	118,216	774	27,514	19,911
55,068	423	0.11	84,479	703	13,051	9,317
37,574	334	0.09	56,394	577	-2,015	-1,455
20,160	193	0.05	35,877	428	-23,513	-15,712
-23,283	-132	-0.04	3,630	96	-104,244	-82,838

Financial Analysis Chart

The farm financial analysis chart is designed just like the farm business chart on the previous pages and may be used to measure the financial health of the farm business.

TABLE 7-13. FINANCIAL ANALYSIS CHART
225 New York Dairy Farms, 2005

Liquidity (repayment)							
Planned Debt Payments Per Cow	Available for Debt Service Per Cow	Cash Flow Coverage Ratio	Debt Coverage Ratio	Debt Payments as Percent of Milk Sales	Debt Per Cow	Working Capital as % of Total Expenses	Current Ratio
$122	$1,083	5.55	6.67	3%	$257	48%	39.30
233	888	2.54	3.09	7	1,048	32	5.67
303	775	2.01	2.51	10	1,677	25	3.64
360	697	1.66	2.14	12	2,241	21	2.97
410	619	1.38	1.73	14	2,521	17	2.36
459	558	1.23	1.44	17	2,864	13	1.81
518	500	1.06	1.20	19	3,189	9	1.49
571	408	0.91	0.92	21	3,444	4	1.18
678	294	0.67	0.58	25	3,932	-1	0.92
833	-236	-0.79	-0.84	38	5,052	-15	0.45

Solvency				Profitability	
		Debt/Asset Ratio		Percent Rate of Return with appreciation on:	
Leverage Ratio[a]	Percent Equity	Current & Intermediate	Long Term	Equity	Investment[b]
0.03	98%	0.02	0.00	35%	19%
0.13	90	0.09	0.00	22	15
0.22	83	0.15	0.01	18	13
0.34	76	0.24	0.11	14	11
0.44	71	0.29	0.22	11	9
0.56	65	0.34	0.31	8	7
0.69	60	0.39	0.40	6	6
0.85	55	0.47	0.51	2	3
1.06	49	0.57	0.67	-1	1
2.14	35	0.76	0.94	-10	-4

Efficiency (Capital)					
Asset Turnover (ratio)	Real Estate Investment Per Cow	Machinery Investment Per Cow	Total Farm Assets Per Cow	Change in Net Worth w/Appreciation	Farm Net Worth, End Year
.85	$1,399	$598	$5,171	$1,005,552	$5,981,028
.71	2,081	878	6,188	429,195	3,058,685
.64	2,402	1,076	6,785	269,436	2,154,509
.60	2,700	1,278	7,210	173,811	1,755,429
.55	3,009	1,438	7,749	107,874	1,279,156
.52	3,452	1,619	8,318	63,949	953,438
.47	3,940	1,798	9,171	40,317	751,546
.41	4,536	2,039	10,012	23,884	574,143
.35	5,506	2,432	11,077	9,786	406,503
.25	9,560	3,667	15,969	-54,455	195,357

[a]Dollars of debt per dollar of equity, computed by dividing total liabilities by total equity.
[b]Return on all farm capital (no deduction for interest paid) divided by total farm assets.

Chapter 8. Fruit

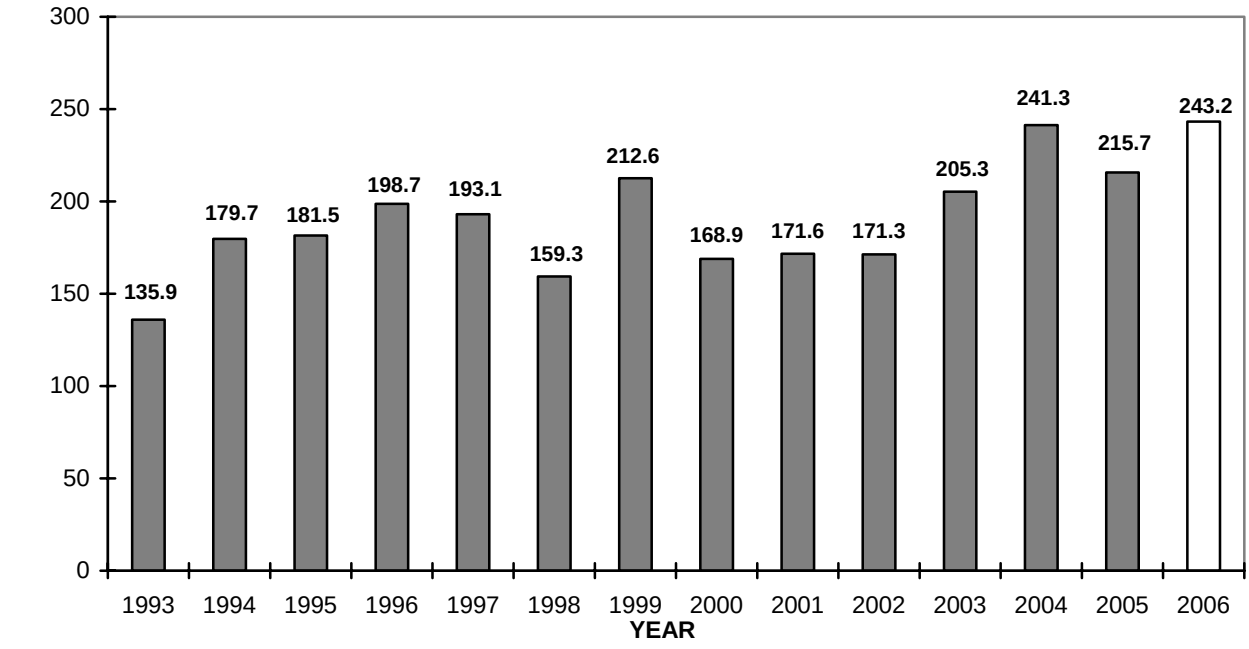
Gerald B. White, Professor

The national production of the six tree and vine crops which are important to New York's agricultural economy is projected to be about 10 percent below last year, and the lowest since 2003. Reduced crops were expected for grapes, tart cherries, and peaches, while increases were projected for apples, pears, and sweet cherries. The national production of apples was forecast at 234 million bushels, marginally below last year's crop, but five percent below the average of the past five years. Grape production was expected to total 6.4 million tons, a decrease of 18 percent from last year's large crop.

In New York, apple production is indicated to be 26.7 million bushels, 8 percent above last year's crop. Indicated production is 11 percent above the state average for the last five years. Grape production was estimated at 154 thousand tons, 13.5 percent below last year's large crop. Total production of the six major fruit and vine crops of 730 thousand tons is projected for the State, 2 percent above last year, primarily because of the larger apple crop.

The utilized value of the major fruit tree and vine crops in New York since 1993 and the projected value for 2006 are shown below. With reduced production of non-citrus nationally and higher prices for fruit (especially for apples), a record $243 million dollars is projected for New York's major fruit crops.

FIGURE 8-1. VALUE OF PRODUCTION OF MAJOR TREE FRUIT & VINE CROPS
New York, 1993-2005 and 2006 (projected)



Source: New York Agricultural Statistics, 2006.

TABLE 8-1. COMMERCIAL NONCITRUS FRUIT PRODUCTION
New York and United States

Fruit	New York				United States			
	2003	2004	2005	2006*	2003	2004	2005	2006*
	thousand tons							
Apples	535	640	520	560	4,397	5,220	4,881	4,921
Grapes	198	142	178	154	6,644	6,240	7,829	6,423
Tart Cherries	4	5	4	5	113	107	135	128
Pears	16	17	9	13	934	878	825	835
Peaches	7	6	4	6	1,260	1,307	1,185	1,054
Sweet Cherries	1	1	1	1	246	283	251	245
Total New York's Major Fruit Crops	761	811	716	730	13,594	14,035	15,106	13,606

*indicated

TABLE 8-2. AVERAGE FARM PRICES OF NONCITRUS FRUITS
New York and United States

Fruit	New York				United States			
	2002	2003	2004	2005	2002	2003	2004	2005
	dollars per ton							
Apples								
Fresh	560	460	456	528	516	588	436	552
Processed	153	134	139	150	130	131	107	105
All Sales*	354	290	302	330	378	418	318	388
Grapes	303	252	229	193	387	403	483	442
Tart Cherries	1012	628	818	864	896	708	656	478
Pears	374	373	386	499	297	294	335	358
Peaches	475	703	717	690	400	377	375	446
Sweet Cherries	1,730	1,770	1,400	1,710	1,550	1,400	1,570	1,990

TABLE 8-3. VALUE OF UTILIZED PRODUCTION, NONCITRUS FRUITS
New York and United States

Fruit	New York				United States			
	2002	2003	2004	2005	2002	2003	2004	2005
	million dollars							
Apples								
Fresh	86.8	117.3	150.5	129.4	1,385	1,606	1,448	1,706
Processed	24.4	36.7	43.1	40.5	196	212	199	188
All Sales*	111.2	154.0	193.6	170.0	1,581	1,817	1,647	1,894
Grapes	47.0	38.3	32.5	34.3	2,842	2,609	3,011	3,459
Tart Cherries	6.4	2.3	4.4	3.2	28	80	70	64
Pears	3.7	5.5	5.4	4.1	264	273	293	295
Peaches	2.4	4.2	4.2	2.8	488	454	462	571
Sweet Cherries	.6	1.0	1.2	1.3	274	342	437	484
Total New York's Major Fruit Crops*	171.3	205.3	241.3	215.7	5,477	5,576	5,920	6,707

*May not add from total of fresh and processed due to rounding errors.

Source: NASS, USDA, Noncitrus Fruits and Nuts 2005 Summary, July 2006.

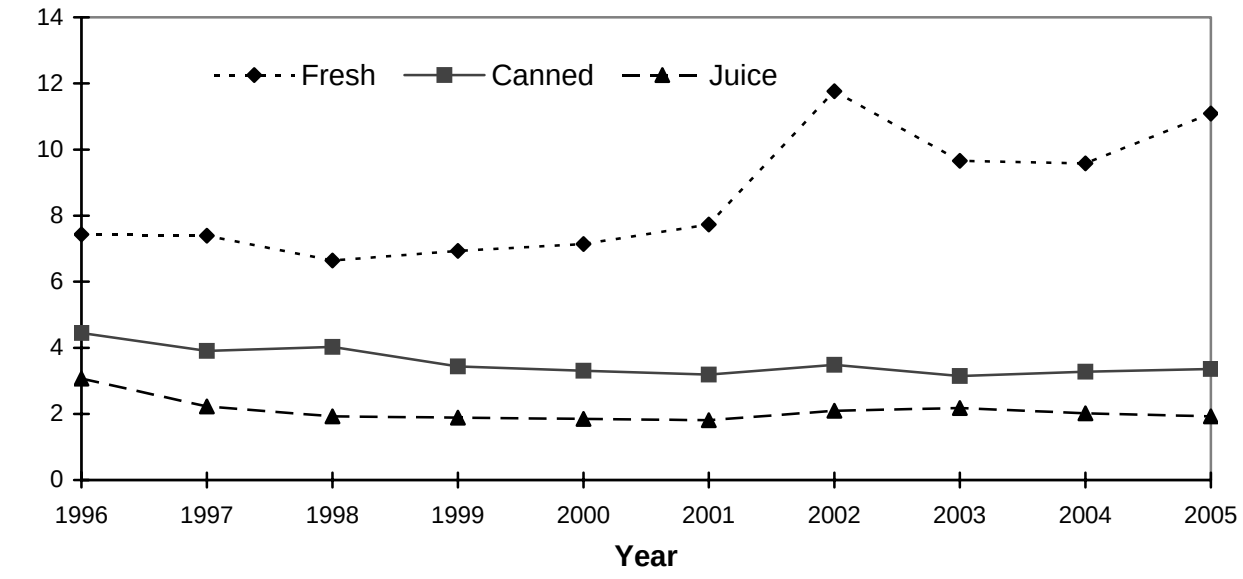
TABLE 8-4. APPLE PRODUCTION, UNITED STATES, 2001-2005, Five-Year Average Production, and 2006 Forecast 1,000 42-Pound Bushels

States/Regions	5-Year Average 2001-2005*	2005*	2006 USDA Estimate**	2006 Compared to USDA 5-Year Average % Change	2006 vs. 2005 % Change
Maine	1,036	738	667	-35.6	-9.7
New Hampshire	638	500	643	0.7	28.6
Vermont	898	786	821	-8.5	4.5
Massachusetts	881	679	738	-16.2	8.8
Rhode Island	50	38	40	-19.0	6.3
Connecticut	424	369	381	-10.1	3.2
New York	24,143	24,762	26,667	10.5	7.7
New Jersey	1,024	1,071	1,071	4.7	0.0
Pennsylvania	10,533	12,262	10,714	1.7	-12.6
Maryland	895	976	905	1.1	-7.3
Virginia	6,714	6,667	5,714	-14.9	-14.3
West Virginia	2,167	2,071	2,143	-1.1	3.4
North Carolina	3,295	3,095	4,167	26.4	34.6
South Carolina	148	95	71	-51.6	-25.0
Georgia	276	333	286	3.4	-14.3
Total East	**53,121**	**54,443**	**55,029**	**3.6**	**1.1**
Ohio	2,071	2,357	2,476	19.5	5.1
Indiana	1,210	1,190	1,357	12.2	14.0
Illinois	1,165	1,167	1,262	8.3	8.2
Michigan	18,333	18,571	19,048	3.9	2.6
Wisconsin	1,414	1,238	1,476	4.4	19.2
Minnesota	586	524	548	-6.5	4.5
Iowa	146	50	107	-26.7	114.3
Missouri	1,029	1,167	1,357	31.9	16.3
Kentucky	165	131	167	1.2	27.3
Tennessee	234	202	262	11.8	29.4
Total Central	**26,465**	**26,598**	**28,060**	**6.0**	**5.5**
Total East & Central	**79,586**	**81,040**	**83,088**	**4.4**	**2.5**
Colorado	595	738	381	-36.0	-48.4
Utah	619	905	524	-15.4	-42.1
Idaho	1,810	1,667	1,667	-7.9	0.0
Washington	126,905	138,095	135,714	6.9	-1.7
Oregon	3,738	3,452	3,690	-1.3	6.9
California	10,238	8,452	8,571	-16.3	1.4
Arizona	466	529	714	53.4	35.1
Total West	**144,440**	**153,838**	**151,262**	**4.7**	**-1.7**
TOTAL U.S.	**224,026**	**234,879**	**234,350**	**4.6**	**-0.2**
TOTAL NORTHEAST	**42,688**	**44,252**	**44,790**	**4.9**	**1.2**

* 2005 and 5-year average production from NASS, USDA, Non-Citrus Fruits and Nuts Summary July 2006.

**2006 crop estimate from NASS, USDA, Crop Production, October 1, 2006.

FIGURE 8-2. AVERAGE ANNUAL PRICES RECEIVED By New York Growers for Apples, 1996-2005



Source: New York Agricultural Statistics, 2006.

Since 1996, processing prices have been steady to declining. Prices for fresh apples in 2002 reached an all-time record of $11.76 per bushel; however the shortest crop in decades held the crop value down to $111.2 million. The value of the crops in 2003 and 2004 soared to respective new records of $154.0 and $193.6, with large crops and strong fresh apple prices. In 2005, the value of the state's crop fell back to 170 million with strong prices ($11.09 per bushel), but lower fresh utilization.

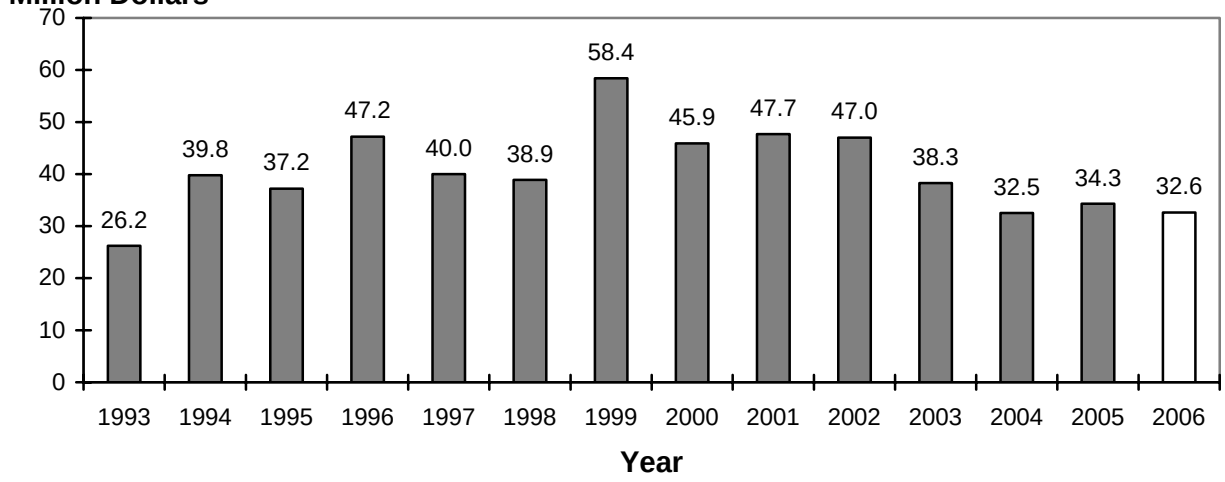
In October 2006, the average price for fresh apples in New York State was 23 percent above the price in 2005, a high price by historical standards. Washington's crop was down two percent below last year's crop; furthermore, the state (which produces about two thirds of the fresh apples in the United States) expected a shorter utilized crop of fresh apples than normal due to hail storms in May and July. Fruit size was smaller, which put a premium on large fruit and helped to strengthen prices for eastern fruit which sized well. Minimal carryover from the previous season was a positive aspect for pricing. Lower production in key apple producing countries such as Poland, Hungary, Germany, Canada, and France (for certain varieties) should mean a strong demand for US apples; moreover, WA exports will be reduced due to their short crop to sell. This should mean an excellent opportunity for exports of eastern apples. New York state exports will be well above the 544 thousand bushels attained last year, and should exceed 800,000 bushels. Fresh apple prices will probably average about 28 cents per pound for the marketing season, and may exceed the record price of 2002.

Announced processing apple prices by grade were somewhat higher than a year ago; large size will further increase growers' returns. The state's apple crop should reach a record value of $197 million! (The assistance of Alison DeMarree, Area Specialist, Cornell Cooperative Extension is acknowledged for this section of the Handbook.)

Grapes

The New York grape harvest was estimated at 154 thousand tons, down 13.5 percent below last year's large crop, and was 6.4 percent below the average production of the past five years. Growers in the Finger Lakes region received very little winter damage and were reporting a moderate to full crop. The crop was affected in April in the Lake Erie Region by frost damage that led to lower yields; however, due to the scattered frost effect, some growers were not hit. Lake Erie growers overall were predicting an average to below average crop. When the final crop value estimate is available, it will likely show a crop value of $33 million, down slightly from last year due to the juice grape situation as well as the market for varieties used in bulk wines, and a low value compared with the historical crop values of the past 10 years (Figure 8-3).

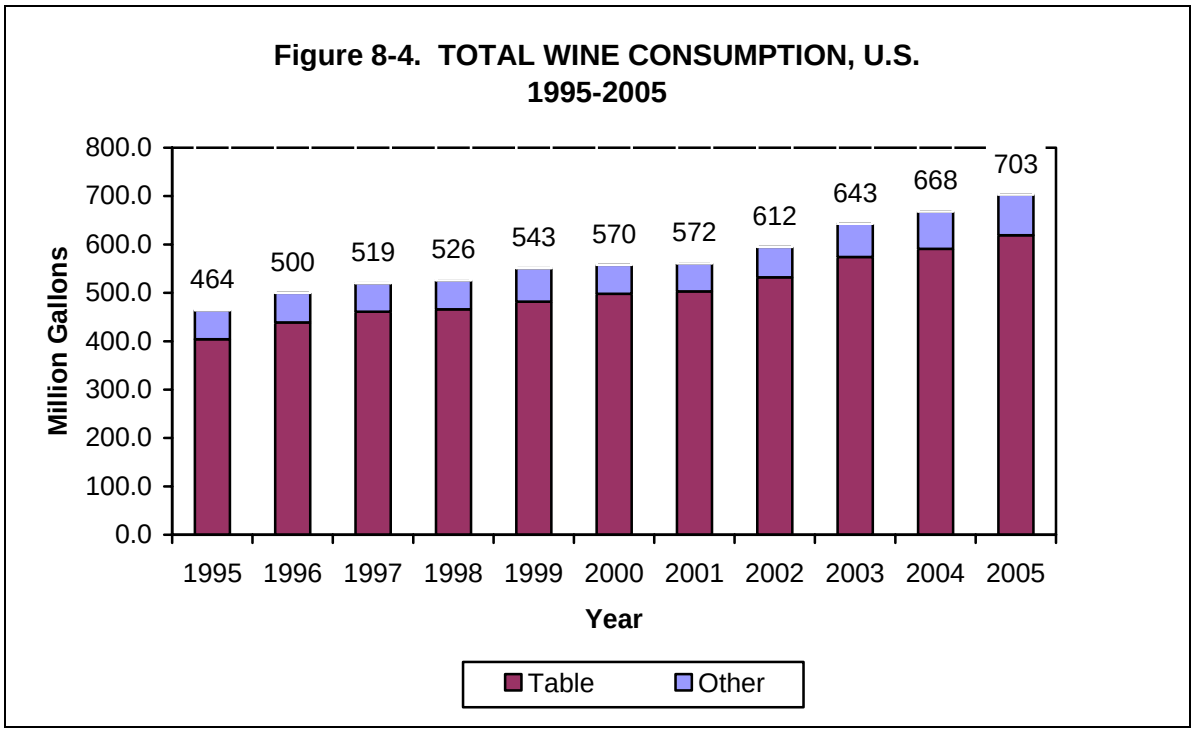
FIGURE 8-3. VALUE OF UTILIZED PRODUCTION OF GRAPES, NEW YORK 1993-2005 and 2006 (projected)



Source: New York Agricultural Statistics, 2006.

Performance in the US wine market is being driven by increased table wine consumption (Figure 8-4). Favorable demographic factors now influencing the market include the following: an increase by 31 percent of wine drinkers in households with incomes of greater than $35,000; the millennial generation (70 million persons, the eldest who are now age 29) who, after a slow start, are beginning to consume more wine; and 31 percent of Hispanic wine consumers are now consuming more wine than they were during the last few years. These factors are extremely encouraging for the future growth in wine consumption. From 1995 to 2001, wine consumption grew at the rate of about 2.5 percent a year. However in 2002, wine shipment entering US distribution channels increased by a remarkable seven percent to a record 612 million gallons, despite the weak economy. US consumption in 2005 was 703 million gallons, an increase of five percent over the previous year. Red wines made in California, with a 42 percent share of total volume, recently surpassed white wines as the predominant color of wine marketed.

Retail wine sales in the US reached $26 billion in '05. With the increased interest of consumers in higher priced wines, sales dollars increased by more than volume. While growth in volume consumed was up 5.2 percent, growth in retail dollars was up 8.8 percent. In the last decade, retail wine sales have more than doubled, a remarkable growth rate that averages nearly eight percent annually!



Source: Wine Institute/Department of Commerce/Gomberg, Fredrickson and Associates

Concords are the predominant variety grown and processed in New York (Table 8-5). There were 135,100 tons of Concords New York-grown grapes processed in 2005, the most since 1999 and 22 percent above the five-year average. Over the past five years, Concords have comprised 72.3 percent of total tonnage utilized in the state. The second leading variety is Niagara with 11.6 percent of tonnage followed by Catawba with 4.3 percent. An estimated 20 percent of the total tonnage of Concord and Niagara, or 23,000 tons, is used for wine. *Vinifera*, with an average of just 3,840 tons utilized, accounted for just 2.9 percent of the NY crush over the last five years.

Wine grapes and wine

Grape prices were generally up for all major categories (Native, Hybrid, and *V. vinifera*). Centerra Wine Company (CWC), the major buyer of wine grapes in New York, listed large price increases of $75 per ton for Aurore and $20 per ton for Elvira (ripe). CWC prices for Concord and Niagara were down from $15 to $20 per ton. CWC offered across the board increases in freight allowances to its growers, as well as prepaying 50 percent of the freight allowance up front.

The overall average listed prices for the major native varieties were up three percent, led by Elvira with an eight percent increase. White hybrid list prices increased significantly, with Vidal Blanc leading the way with a nine percent increase. Red hybrids price listings as a group were virtually unchanged, but Rougeon increased by seven percent.

Prices offered by Finger Lakes wineries for *vinifera* grapes were higher than last year for most major varieties except for Lemberger. Stronger price increases were registered by white varieties than for red, with Chardonnay and Riesling both up by 20 percent. *Vinifera* prices are expected to remain strong for at least the next year or two as replanted vines from the winter damage in January 2004 have just begun to reach pre-freeze production levels. Consumer demand for *vinifera*, especially for red varieties, is also encouraging.

TABLE 8-5. GRAPES: NEW YORK GROWN
Received By Wineries and Processing Plants, 2000-2004

Variety	2001	2002	2003	2004	2005	5-Year Avg.
	- tons -					
Concord	107,200	107,770	104,000	99,300	135,100	110,674
Niagara	15,100	18,880	18,000	19,800	17,000	17,756
Catawba	7,760	6,680	7,650	4,760	6,050	6,580
Elvira	3,950	4,200	5,250	4,770	5,600	4,754
Delaware	550	820	550	290	460	534
Ives	150	165	180	200	140	167
Aurora	2,880	4,100	3,620	2,210	1,940	2,950
de Chaunac	850	590	320	160	140	412
Baco Noir	990	930	1220	350	450	790
Seyval Blanc	610	590	480	410	460	510
Cayuga White	670	830	650	640	580	674
Rougeon	680	625	530	130	490	491
Vitis Vin.(all)	4,410	4,620	4,550	5,080	3,840	4,500
Other varieties	2,200	2,200	2,000	1,890	2,750	2,208
Total, all varieties	148,000	153,000	149,000	140,000	175,000	153,000

Source: New York Agricultural Statistics, 2006

TABLE 8-6. GRAPES: PRICES PAID FOR NEW YORK GROWN GRAPES PROCESSED 2000-2004

Variety	2000	2001	2002	2003	2004	5-Year Avg.
American Varieties						
Catawba	246	252	237	242	234	242
Concord	263	264	259*	200*	193*	236
Delaware	272	259	284	284	338	287
Elvira	244	250	257	264	259	255
Ives	385	381	302	349	371	358
Niagara	248	240	285*	381*	231*	277
French American Hybrid						
Aurore	240	244	245	260	279	254
Baco Noir	405	442	362	388	470	413
Cayuga White	412	398	415	394	375	399
de Chaunac	391	375	321	342	301	346
Rougeon	384	382	315	313	433	365
Seyval Blanc	392	377	533	452	388	452
Vitis Vinifera						
All varieties	1,310	1,316	1,454	1,264	1,295	1,328
TOTAL	295	316	296	242	223	274

*Preliminary estimates of future payments by cooperatives have been included based upon historical data.
Source: Fruit, 975-2-06 NY Agricultural Statistics Service.

Most wine grape growers' revenues and profits will be above last year, with a moderate to average crop in the Finger Lakes, but improved prices across the board. Growers who derive a substantial portion of revenue from Concord and Niagara grapes sold to juice and/or large winery processors are not in as strong a position. Grape prices for native varieties are driven by national and international competition for bulk wines and juice concentrate in these markets. Revenues will be up for these growers, but prices are mediocre by historical standards. Growers' net incomes will be negatively affected by relatively high costs for fuel, fertilizer, pesticides and labor even though fuel prices have decreased in the last few months.

With over 200 wineries in New York, and healthy growth continuing, it is clear that the demand for grapes for small wineries will continue to grow—someone will supply grapes to those wineries. Having many more buyers offers opportunities, but makes the marketing function more complex for growers. The situation for Finger Lakes growers is encouraging in that there are now many more marketing options for those who have the varieties that wineries are demanding.

The problem currently is that well over two thirds of the market for grapes in the Finger Lakes is still with major processors, and prices are depressed in these markets, especially for native varieties. National Grape Cooperative is going through challenging times at the moment. The 2005 Concord national crop of 563 thousand tons, which was 17 percent over the previous record crop of 480 thousand tons, still hangs over the market. Cash prices for these varieties increased to over $200 per ton in 2006, but largely because of the freeze in Western New York and Michigan, not because of increased demand. For the types of grapes being marketed to large, cash market processors (mostly native varieties for wines sold through national distribution), the ***low cost producer rules!***

So how can growers succeed in marketing to small wineries? They will need a different set of skills. In addition to growing grapes more efficiently (higher yields and/or reduced costs), they will also need to be more entrepreneurial, pro-active, and marketing oriented in order to market to the growing small winery sector—both in the Finger Lakes and in the entire eastern United States. For some suggestions on strategy, see the Finger Lakes Vineyard Notes, November 2006.

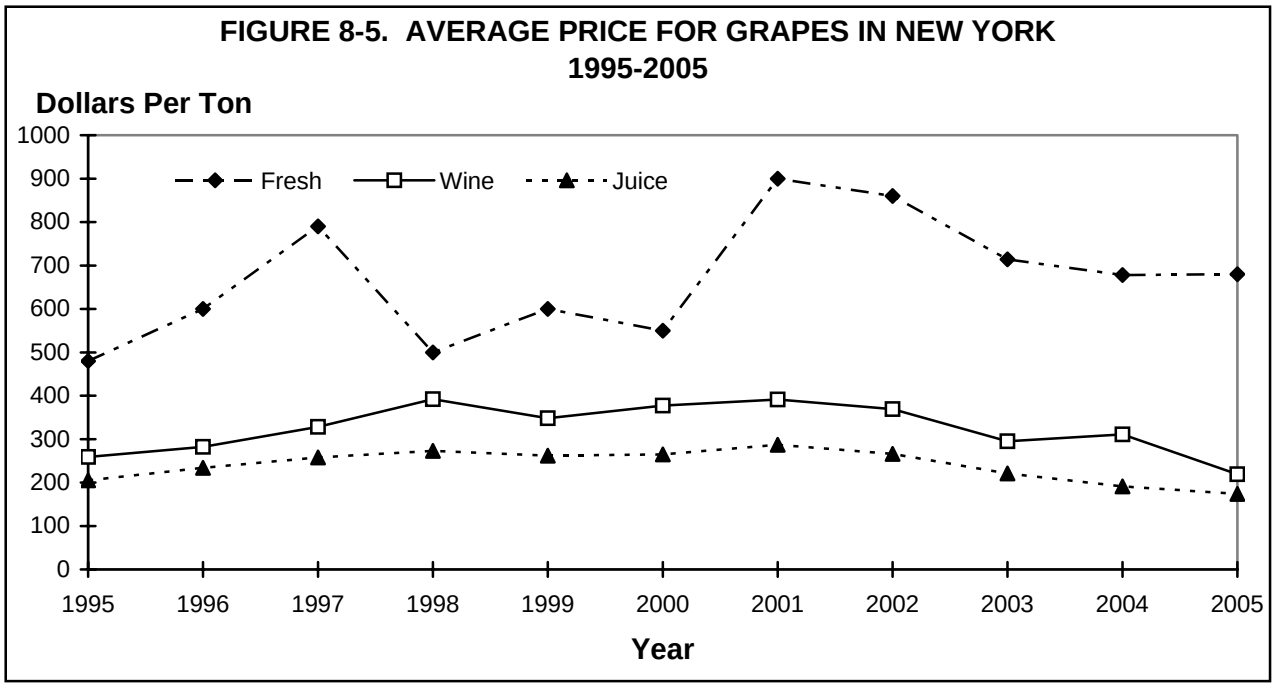
Juice Grapes

National Grape Cooperative crop intake was 216,000 tons of Concords and 42,300 tons of Niagara following the largest juice grape crop in history in 2005. National's intake for 2006 is down 38 percent from last year's record crop. National Grape Cooperative processes about 40 percent of the total NY grape crop and over two thirds of the US Concord crop, and thus is the dominant player in the US juice grape industry. **The cash market for juice grape growers recovered to $205 per ton for Concords, well above the $165 (for 16 brix) grapes last year.** Similarly, the cash advance for National grape growers was $100, up from $85 last year. Actual payments to growers this year will be somewhat lower due to the adjustment for brix.

The Concord juice grape industry has experienced three down cycles of high to low prices in the last 30 years. The recent down cycle started in 2002 and lasted four years (see Figure 8-5). The high prices of 2001 had caused traditional buyers of Concord to source from non-Concord grapes. These processors found that the market would accept grape juice without the strong Concord flavor. During the past few months, however, processors came back to Concord concentrate and juice because of the lowest prices in many years. Does this mean the beginning of an up cycle in juice grape prices such as we have seen after each of the recent down cycles?

There are several other positive factors which point to an up cycle for the industry:

- The effect of the poor quality 2003 crop, which had resulted in approximately 2 million households that stopped buying Welch's due to poor quality, has now run its course
- This year's crop is a more manageable size



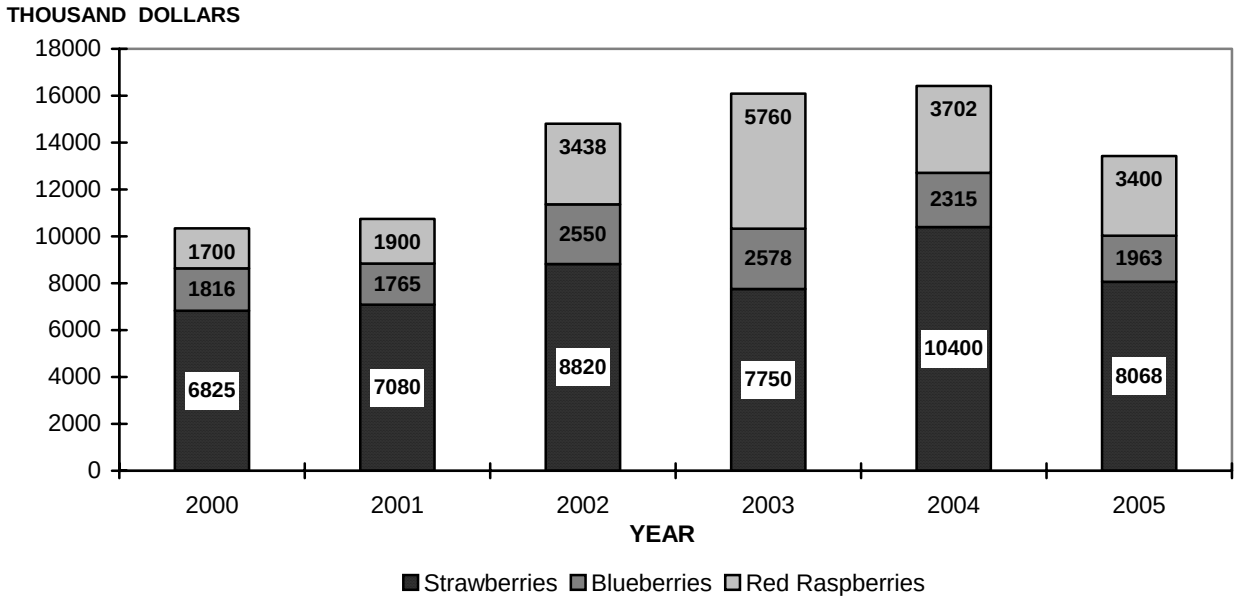
Source: New York State Agricultural Statistics, 2006.

- Expansion of Welch's single serve 100% grape product category is encouraging
- Welch's international sales are increasing, and test marketing of four flavors is on-going in 200 supermarkets and all Wal-Mart stores in China's undeveloped market for grape juice
- Most importantly, grape juice's proven anti-oxidant properties is a long-run strength for an aging and health conscious population

The main negative factor is the general weakness of the whole multi-serve fruit juice category, which declined five percent during the last year. Low calorie and low carb juice products captured a share of the market. A study published early in 2005 in the Journal of Pediatrics linked preschool obesity and sweet juice consumption. The article used a broad definition of drinks that included soda and sweetened drinks, but much of the ensuing publicity focused on 100 percent juices. The initial effects of this unfavorable publicity have been successfully countered. But in the longer term, juice processors may need to make substantial adjustments in their product lines to address concerns over the sugar that occurs naturally in Concord and Niagara grapes. National Grape's earnings are also being negatively affected by the high cost of energy, causing an increase in transportation, processing, and packaging costs.

These factors suggest an overcapacity in the juice grape farming sector, implying a needed adjustment to fewer, more productive acres (and more efficient growers) of juice grapes. This type of adjustment occurred in the mid-1980s in a low-price cycle. From 1980 to 1990, the number of farms growing grapes in the Lake Erie grape belt fell from 1,269 to 688. Juice grape producers need to be able to produce an average of seven to eight tons per acre to remain competitive! (The assistance of Barry Shaffer and Tim Martinson, area Extension Educators in the Lake Erie Region and the Finger Lakes Region Grape Programs are acknowledged for this section of the Handbook.)

FIGURE 8-6. VALUE OF UTILIZED PRODUCTION OF SMALL FRUIT
New York, 2000-2005



Source: New York State Agricultural Statistics, 2006.

The value of small fruit production is expanding rapidly in New York state (Figure 8-6), and exceeded $16 million in 2004. Most of the production is sold through direct marketing. The value of strawberries had been relatively stable in recent years at $6.8 to $8.8 million, but grew to $10.4 million in 2004. Growth has occurred mainly with red raspberries, reaching over $5.7 million in 2003. All small fruit crops were down in revenue in 2005, with a total crop value of $13.4 million in 2005. This resulted primarily from drought, which reduced crop yields and dried up ponds for growers who irrigate; and reduced yields from heat as well.

Policy Issues

Two policy issues are of great interest to fruit growers in the upcoming year—specialty crops in the 2007 Farm Bill and immigration reform.

Specialty crops are broadly defined as all "non-program crops". A narrower, more useful definition is fruit, vegetable, greenhouse, and nursery crops. Specialty Crops interests are mobilizing for the upcoming debate on the 2007 Farm Bill with a proposal that would direct more federal funding to specialty crops. One proposal, HR 6193, the Specialty Crop Farm Bill Act, provides for the creation of a Specialty Crops Economic and Policy Research Institute to study economic and public policy issues that affect the competitiveness of domestic specialty crops from a regional and national perspective, patterned after the California Institute for the Study of Specialty Crops.

Some other proposals of interest to fruit growers include the following:

- Expansion of the State Block Grants for Specialty Crops program authorized in the Specialty Crop Competitiveness Act of 2004. These grants address the need to increase the consumption of specialty crops in the United States.
- Flexible Payment Limitations for Disaster Payments to reflect variations in cost of production-restructures the current disaster assistance payments to allow producers of specialty crops with higher cost of production to receive proportionally larger disaster assistance. The current $80,000 payment limit is perceived to be in equitable for specialty crop producers compared to other crops.
- Availability of disaster assistance for "first handlers" of specialty crops. This would permit treating income derived from preparing, packing and marketing as income derived from a farming operation, provided that the first handler is also a producer.
- Equitable treatment of specialty crop producers in distribution of Disaster Assistance. Eligibility for disaster payments would not be limited to only those producers that are eligible for direct payments, but instead must be based on criteria that also include specialty crops.
- Tree Assistance Program-increases the maximum payment to qualifying orchardists in order to better reflect actual costs of tree removal and replacement as a result of damage caused by a natural disaster.
- Various measures would make conservation programs more available to specialty crops growers.
- Trade measures would boost US specialty crop exports by facilitating the removal of specialty crop trade barriers, increase funding for MAP in order to encourage domestic exports, and make grants to promote the creation, expansion, or operation of value-added processing for specialty crops.
- Nutrition provisions would increase funding for the Fresh Fruit and Vegetable Program in order to increase children's consumption of fruits and vegetables, establish a matching grant program to promote increased consumption of fruits and vegetables to meet USDA's 2005 Dietary Guidelines, and provide funds for increased fruit and vegetable purchases in schools
- Establishes a new competitive grant program within USDA's CSREES to improve the efficiency and competitiveness of specialty crop producers in the world marketplace.

Immigration reform rose to the top of growers' concerns during the 2006 harvest. Tightened enforcement of immigration law resulted in a shortage of labor for many growers and an increasing number of raids by Immigration Control and Enforcement (ICE) during harvest. The situation was exceptionally acute in New York, perhaps due to the proximity to the border. The most noticeable effects of the tighter labor situation were higher harvesting costs and difficulties in optimal harvest scheduling. These events were not numerous enough to affect aggregate apple supply in the Northeast or nationally, but the uncertainty surrounding labor supply was a major concern for growers.

With the recent election results, immigration reform now seems more likely than before. It is conceivable that the new Democratic majority in Congress would reach a deal with President Bush on immigration reform that includes increased access to Hispanic laborers from Mexico and Central America. **However it seems unlikely that meaningful immigration reform will be enacted prior to the 2007 harvest**. Many forward looking growers in New York are already contacting their local employment offices to start the process of obtaining H-2A labor for the 2007 harvest.

Chapter 9. Vegetables

Wen-fei L. Uva, Senior Extension Associate

In 2006, the year started great with warm, dry weather during the month of April and the first half of May. Most vegetable growers were getting their crops in on time or even early. The weather turned cool and rainy after mid-May. In mid-to-late June, the eastern part of the state and Southern Tier were hit by flooding rains, the worst in over 30 years. Vegetable yields in those areas were cut between 50 and 100 percent. The western part of the state was spared most of that rain through August. Yields of processing vegetables were better than average. However, by early September, these areas were also getting heavy rains which ended production earlier than normal. Growers in the western areas that still had pumpkins and were counting on a nice autumn to market them were hit by record breaking snow in mid-October that buried pumpkins, late cabbage, and beets, and made some of the crops unmarketable.

2005 was both too dry and too wet for New York vegetable growers. It started with a cool and dry spring, and was followed by a summer that brought drought and was also hotter than normal. This resulted in lower yields on crops like onions, but the hot weather was good for crops that like the heat, such as tomatoes and bell peppers. The fall of 2005 started out dry and ended up wet, with unharvested crops like pumpkins and squash left in the fields. The wet fall also affected sales at farm markets. However, crop prices were above 2004, despite the weather conditions. Table 9-1 and Table 9-2 show the value and acreage of fresh market and processing vegetables, respectively, in 2004 and 2005.

TABLE 9-1. VALUE AND ACREAGE OF SELECTED FRESH MARKET VEGETABLES IN NEW YORK, 2004 AND 2005

	2004		2005	
Crop	Value	Planted Acres	Value	Planted Acres
	($ million)	*(acres)*	*($ million)*	*(acres)*
Sweet Corn	59.9	29,000	60.5	30,000
Potatoes	42.8	20,000	65.3	20,500
Onions	54.3	13,500	45.7	13,800
Cabbage	43.2	10,700	67.3	10,000
Snap Beans	14.0	7,900	23.0	9,000
Tomatoes	25.4	7,000	21.9	6,000
Squash	24.1	4,700	15.3	4,700
Cucumbers	37.9	4,200	29.1	4,500
Pumpkins	22.9	2,500	21.5	2,200
Peppers	0.9	1,100	3.3	1,000
Cauliflower	5.1	500	6.7	600
Eggplant	0.9	460	0.4	460
Spinach	2.6	400	3.7	450
Endive/Escarole	0.7	230	1.2	230
TOTAL Fresh Market	333.6	102,390	364.9	103,440

Source: New York Agricultural Statistics.

TABLE 9-2. VALUE AND ACREAGE OF SELECTED PROCESSED VEGETABLES, 2004 AND 2005

	2004		2005	
Crop	Value	Planted Acres	Value	Planted Acres
	($ million)	*(acres)*	*($ million)*	*(acres)*
Snap Beans	13.0	20,900	12.8	21,400
Peas	11.7	19,000	11.4	20,600
Sweet Corn	8.6	19,500	9.3	19,400
Beets	2.8	4,100	3.0	2,200
Kraut Cabbage*	4.0	2,000	3.9	2,200
TOTAL Processing	40.1	65,500	40.4	65,800

Source: New York Agricultural Statistics.

Industry Outlook

The Fate is Uncertain for Country of Origin Labeling

Although supported by a majority of farmers, the country of origin labeling has been delayed once again. While implementation of country of origin labeling for seafood has taken effect, in January 2004 and September 2006 the president signed laws that delayed the labeling for meat and produce until September 2008, by which time another delay may well be passed into law. The opposition has come primarily from trade associations such as Grocery Manufacturers of America, The American Frozen Food Institute, the National Food Processors Association, and the National Fisheries Institute. The trade groups maintain that labeling is going to cost money, and those costs will be passed along to consumers.

Big Box Stores Go Organic

Two major big box grocery retailers have decided that offering more organic food will help them appeal to urban and other upscale consumers. Wal-Mart launched an aggressive push into organics in 2006, and soon after, Target also introduced its own line of organic foods. Both retailers are hoping to capture a share of the nation's burgeoning organic food market. In a recent national survey by the Food Marketing Industry, 41 percent of Americans identify themselves as organic consumers. The "typical" organic consumer is a female shopper between 25 and 54 years old, with a household annual income over $50,000. Research also showed that when women are pregnant they start looking at healthier lifestyles and are more open to organics.

Wal-Mart's interest is expected to change organic food production in substantial ways. Some organic food advocates applaud the development, saying Wal-Mart's efforts will help expand the amount of land that is farmed organically and increase the quantities of organic food available to the public. Others say the initiative will ultimately hurt organic farmers, will lower standards for the production of organic food, and will undercut the environmental benefits of organic farming.

Marketing with The Food Pyramid

While the USDA has not been able to successfully communicate the value of the Food Pyramid to consumers, the supermarket industry has picked it up and run with it. Many supermarkets have used the information from the Food Pyramid to promote healthy eating to their customers. Despite the lack of knowledge about the new food pyramid, an analysis of the sales data of items sold within each food group shows that consumption of fruits and grains has grown almost three times faster than overall food sales during the past five years according to data from the market research firm ACNielsen.

TABLE 9-3. 5-YEAR COMPOUND ANNUAL GROWTH RATES

Overall food pyramid	2.5%
Fruit group	6.6%
Grain group	6.3%
Other (fats, oils, sweets)	2.6%
Meat group	1.8%
Milk group	1.0%
Vegetable group	0.5%

Now a new initiative from USDA plans to take the message even further. MyPyramid will soon get much needed marketing support with the launch of "Take a Peak", an in-store promotional campaign scheduled to roll out at over 3,500 food stores starting in the first quarter of 2007. Backed by the Grocery Manufacturers Association (GMA) and Food Marketing Institute (FMI), supported by the USDA, and created by MatchPoint Marketing, Take a Peak is the first widespread attempt at an in-store educational campaign by the food and beverage industry.

Chapter 10. Ornamentals

Wen-fei L. Uva, Senior Extension Associate

In 2005, the commercial sales value of New York floriculture production totaled $200 million, a 10 percent increase from the year before, and once again ranked New York 5th in the nation. The number of commercial growers decreased to 772. The open ground area used to produce floriculture crops in the state was 876 acres, down 6 percent from 2004, and greenhouse space decreased 2 percent to 25.0 million square feet in 2005.

TABLE 10-1. GROWER CASH RECEIPTS OF FLORICULTURE AND NURSERY CROPS, NEW YORK, 2000-2005

	2000	2001	2002	2003	2004	2005[p]
			--- Million dollars ---			
Floriculture[a, b]	179.9	172.9	186.9	194.9	183.0	200.5
Nursery[c]	135.9	142.9	153.7	159.6	172.4	181.3
Floriculture and nursery crops	315.8	315.8	340.6	354.5	355.4	381.8

[a] Includes growers with $10,000 or more in floriculture sales.

[b] Includes ornamental plants without woody stems, grouped into bedding/garden plants, cut cultivated greens, cut flowers, potted flowering plants, indoor foliage plants, and propagative floriculture material.

[c] Includes ornamental plants and trees with woody stems, including broadleaf evergreens, coniferous evergreens, deciduous shade trees, deciduous flowering trees, deciduous shrubs and other ornamentals, fruit and nut plants for home use, cut and to-be-cut Christmas trees, and propagation material or lining-out stock. Also includes other ornamental crops not classified as floriculture.

[p] Preliminary.

Source: Floriculture and Nursery Crops Situation and Outlook Yearbook, Economic Research Service, USDA, various years.

TABLE 10-2. WHOLESALE VALUES OF FLORICULTURE PRODUCTION, BY GROWER SIZE[a], NEW YORK AND UNITED STATES, 2003-2005[b]

	New York			U.S.		
	2003	2004	2005[p]	2003	2004	2005[p]
			------ Million dollars ------			
Small growers	26.3	25.3	22.9	312.3	299.2	279.6
Large growers	168.6	157.7	177.6	4,769.9	4,985.4	5,083.4
All growers	194.9	183.0	200.5	5,082.2	5,082.6	5,363.0

[a] Small growers have between $10,000 and $100,000 in annual floriculture sales; large growers have at least $100,000.

[b] Wholesale value of sales of growers with at least $10,000 in annual floriculture sales. Growers are located in the 36 surveyed states.

[p] Preliminary.

Source: Floriculture Crop, National Agricultural Statistic Service (NASS), USDA, 2005.

TABLE 10-3. GROWING AREA FOR FLORICULTURE CROPS IN NEW YORK[a], 2000-2005[p]

Year	Total greenhouse cover	Shade and temporary cover	Total covered area	Covered area per grower	Open ground	Total covered & open ground
		-- 1,000 square feet --			*--- acres ---*	
2000	21,062	466	21,528	81	508	1,002
2001	18,649	604	19,253	75	858	1,300
2002	17,279	510	17,789	70	453	861
2003	18,065	634	18,699	76	455	884
2004	19,767	625	20,392	80	516	984
2005[p]	19,488	491	19,979	80	542	1,001

[a] Includes operations with $100,000+ in annual floriculture sales. Crops include cut flowers, cut cultivated greens, potted flowering plants, potted foliage plants, bedding and garden plants, and propagative materials. Total may not add due to rounding.

[p] Preliminary.

Source: Floriculture Crops, NASS, USDA, various years.

TABLE 10-4. VALUE OF FLORICULTURE PRODUCTION BY PLANT CATEGORY, NEW YORK, 2000-2005

	2000	2001	2002	2003	2004	2005[p]	5-yr. avg. 2000-2005	2005 vs. 5-yr. avg.	2005 vs. 2004
				--- Million dollars ---				**%**	**%**
Bedding/garden plants[a]	97.6	97.4	99.3	107.5	101.1	110.6	100.6	+10	+9
Potted flowering plants[a]	37.4	40.2	47.9	43.1	40.2	49.6	41.8	+19	+23
Cut flowers[a]	6.1	4.5	5.6	5.0	4.7	2.7	5.2	-48	-43
Foliage Plants[a]	3.7	2.5	3.9	4.1	3.5	3.1	3.5	-12	-10
Propagative materials[a]	11.9	6.0	5.4	9.0	8.2	11.5	8.1	+43	+40
Grower sales $10,000-$99,999 (Unspecified crops)	23.2	22.4	25.0	26.3	25.3	22.9	24.4	-6	-10
Total[b]	**179.9**	**172.9**	**186.9**	**194.9**	**183.0**	**200.5**	**183.5**	**+9**	**+10**

[a] Sales by operations with annual sales of $100,000 or more.

[b] Total reported crops includes categories not listed – cut cultivated greens and propagative materials.

[p] Preliminary.

Source: Floriculture and Nursery Crops, Situation and Outlook Yearbook, Economic Research Service, USDA, various years.

Industry Outlook

In 2005 and 2006, higher gas prices led to greater input price inflation for the ornamental industry as costs rose for fertilizer, storage, heating, transportation, and more. Higher energy and gasoline prices not only increased greenhouse operation costs, they also raised the cost of living for consumers. Therefore, demand for ornamental products was subdued despite abundant floriculture and nursery crops around the country.

A modest 2 percent gain in sales of greenhouse and nursery crops is estimated for 2006. As an indicator of demand for ornamental crops, sales per U.S. household is projected to be about $147 (at wholesale) for domestic crops in 2006, similar to that in 2005 ($146 per household). These expected gains in sales are not sufficient to cover increased grower costs. Furthermore, domestic prices of floral crops were up by less than the general consumer price of inflation. All these factors increase pressure for growers to further reduce production costs.

Domestic prices of U.S. floriculture crops have barely risen in recent years and are only 5 percent higher than they were in 2000. By comparison, import prices of floral crops are projected to be up 5 percent in 2006, which would make them 17 percent above prices in 2000. This import price hike is mainly from flowering plants such as roses, orchids, chrysanthemums, and herbaceous perennials, which in turn are dominated by herbaceous perennials from Canada.

Even as the number of large U.S. growers of floriculture crops continues to decline, the production area covered by greenhouses or temporary cover keeps climbing. Similarly, open field production acreage also continues to rise. As floriculture sales per grower reached $1.2 million on average in 2005, sales per acre exceeded a record $100,500. Regionally, sales per acre were $122,700 and $117,100, respectively, for operations in the Northeast and Midwest, in contrast to $93,800 and $93,150 in the South and West. Nevertheless, sales per grower exceeded $1.5 and 1.6 million, respectively, in the South and West, about twice as much as those of Midwest and Northeast operations. Moreover, sales of floral crops are growing fastest in the South. Sales of flowering annuals and herbaceous plants from the South already lead other U.S. regions in pace and value. Growers located in the South are capturing U.S. market share for many floral crops at the expense of growers in other regions, including the West.

Chapter 11. Agriculture and the Environment

Federal Policy Initiatives: Focus On the 2007 Farm Bill

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Our discussion in last year's Agribusiness Economic Outlook handbook chronicled the development of state and local farmland protection policy, discussed water quality issues for New York agriculture, and showcased opportunities, concerns and challenges to New York State's Agricultural and Farmland protection efforts. We emphasized that, in recent years, this program has demonstrated all the characteristics of a mature, established policy. We presented evidence showing that property tax savings due to agricultural assessments on farmland and tax reductions on new or newly reconstructed farm buildings provide to agricultural land owners and operators continue to rise steadily; additional county agricultural and farmland protection plans have been established, and agricultural districts have continued to be reviewed, renewed, and in many cases consolidated. Purchase of development easements continues at the state level, with support to the New York State Department of Agriculture and Markets from the New York State Environmental Protection Fund.

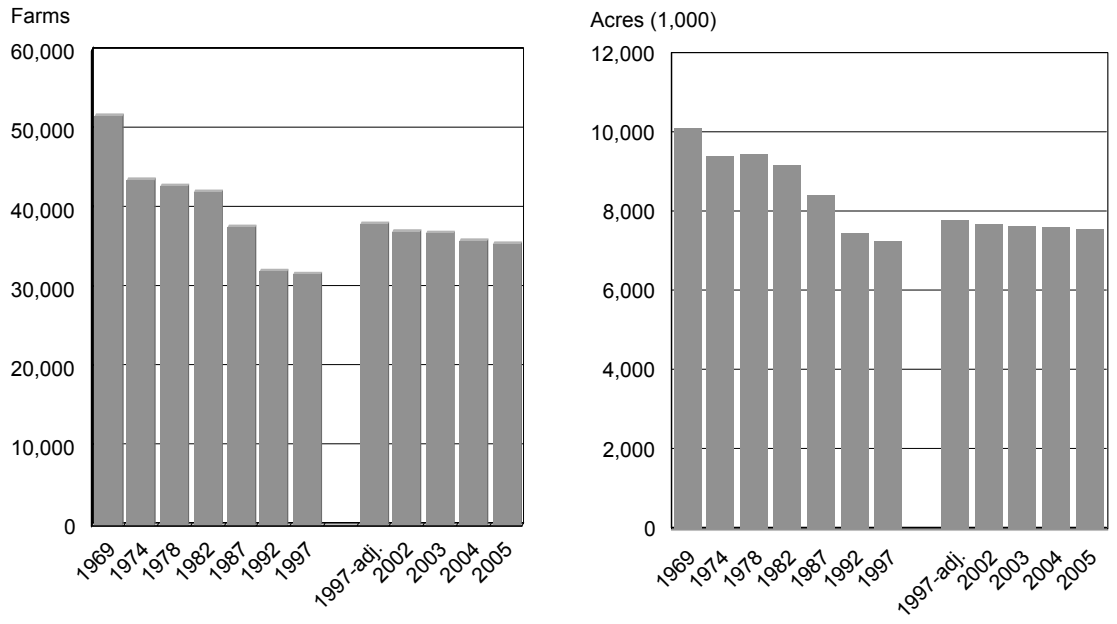
This year we change gears in order to showcase new policy developments at the Federal level. Specifically we highlight new initiatives in water quality policy and discuss the results of a recent Farm Foundation survey that gives us some insight into farmer preferences for the Conservation Title of the 2007 Farm Bill. In the wake of this fall's general election, we expect the Congress to begin markup of this critical piece of farm legislation in the months ahead. Many organizations and many voices are engaging around that topic--in unprecedented numbers compared to previous Farm Bill cycles. In this vibrant policy environment, it is important that concerns and attitudes of the farm community itself do not get lost in the shuffle.

First, however, as a prelude to our discussions of emergent Federal policy, we review broad trends in land use and farm commodity production by updating some information provided in this chapter in years past.

I. Land Use and Farm Production in New York

New York's land resources are key ingredients for agricultural commodity production. Crop and livestock production has always been a predominant feature of the New York State landscape. After the American Civil War, New York State led the nation in farmland acreage. As late as a century ago, about three-fourths of the State land base was counted as land in farms. But during much of the twentieth century, agricultural lands in New York, indeed throughout the Northeast, have slowly been converted or reverted to alternate uses and, due to consolidation and other socio-economic trends, the number of farms has declined. Some of the acreage released from farm use has been converted to a developed use, but millions of acres sprouted brush, then small trees and, over time, woodland that can again reclaim the title of forest. Corresponding trends in farm numbers and farm acreage in New York are shown in Figure 11-1.

FIGURE 11-1. FARMS AND LAND IN FARMS, NEW YORK, 1969-2005



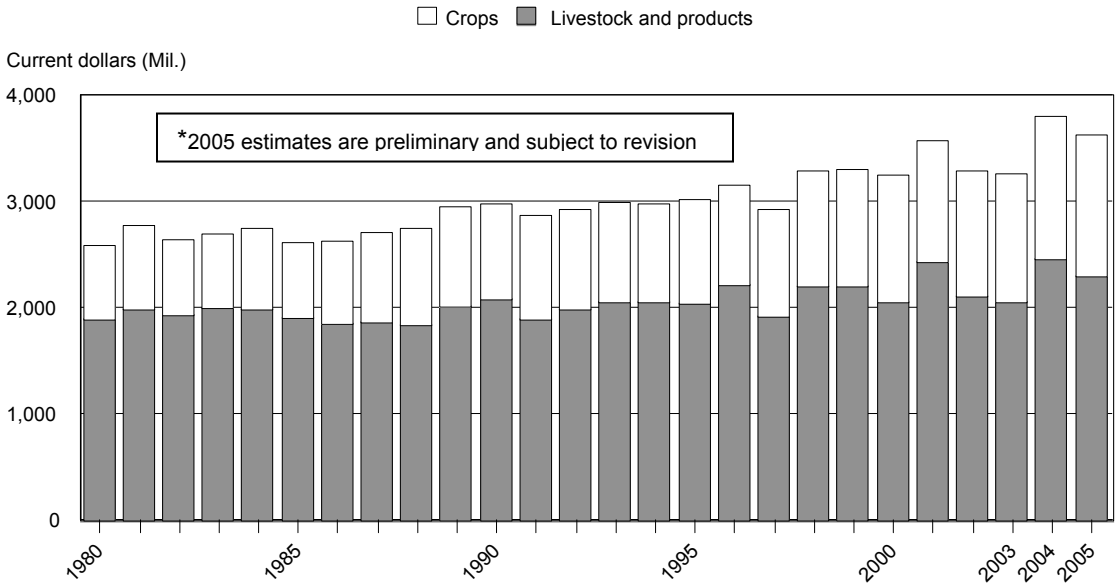
Source: 2002 Census of Agriculture and NYS Agriculture Statistics Service.

For 2005 The USDA farm estimate for New York is 35,600 farms, down just 400 farms in 2004. The farmland base--acreage used for crops, pasture, and support land-- has stabilized in the early 2000s at about 7.5 million acres across New York State.[1]

The value of crops and livestock produced on these farms hovered in the $3 billion range during the 1990s and into this decade. Receipts spiked upward in 2004, led by a higher receipts in New York's lynchpin dairy sector and downward in 2005 largely for the same reasons (Figure 11-2). Farm businesses also support industries that process raw farm commodities and supply inputs needed for commercial farm production. Statistics of these data are less frequently reported. In 2000, the value of gross output originating on New York farms and with businesses classified as agricultural services or food manufacturing totalled $25.1 billion.

[1] Some of these land-use developments are masked by changes in data management. For the 2002 Census of Agriculture, the USDA adopted new measures to correct for under-counting of farm operations. As indicated in Figure 11-1 these adjustments led to a notable rise, for calendar 2002, of approximately 20% in the estimated number of farm operations and a corresponding, but lesser, increase (8%) in estimated farm acreage.

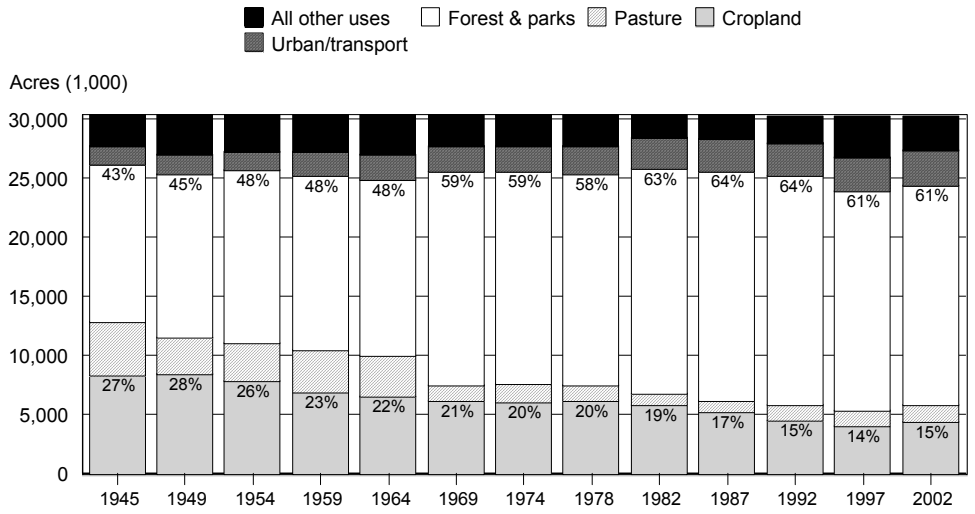
FIGURE 11-2. VALUE OF FARM MARKETINGS, NEW YORK, 1980-2005*



Source: Derived from data published by the U.S. Dept. of Commerce, Bureau of Economic Analysis, and the NYS Agriculture Statistics Service.

New York State has not conducted a comprehensive inventory of land uses since the late 1960s, making for a good deal of uncertainty over the status of overall land use. Two USDA agencies—the Economic Research Service (ERS) and the Natural Resources Conservation Service (NRCS)—attempt to fill that void with published estimates of land use and land cover. Because of budget considerations, the Federal land-use estimates are either dated, published only for multistate areas, or both. Widely circulated trend data estimated in a consistent manner by ERS since the late 1940s are shown in Figure 11-3. They indicate that, as in years past, forest cover predominates for New York State as a whole; more than six of every 10 acres are classified as forest by the USDA. USDA crop and pasture estimates track the census data reported above and show marginal decreases in both categories moving into this decade. This USDA data series uses a conservative estimate of urbanized land, using Census definitions. Urbanized land by Census definition includes incorporated cities and villages with a population of 2,500 or more and adjacent densely populated territory. In 2002, slightly more than 2.5 million acres fell into this urban land category as shown in Figure 11-3. Although dated, USDA estimates from the 1997 NRCS National Resources Inventory (NRI) are more expansive in definition and put urban and built-up acreage in the range of 3.2 million acres nearly 10 years ago.

FIGURE 11-3. MAJOR USES OF LAND, NEW YORK, 1945-2002



Source: USDA-ERS.

II. Old Pony-New Tricks: Emergent Shifts in Federal Water Quality Initiatives for Agriculture

The relationship between agriculture and water quality has long been a concern in the United States and in New York State. While the effort to reduce surface water pollution from industrial, municipal, and other "point" sources has been quite successful under the Clean Water Act, many of the Nation's waters are still impaired. Recent data from the Environmental Protection Agency (USEPA) indicate that the water quality in 40% of the assessed rivers, 45% of the streams, and 50% of the lakes still do not support their designated uses. And agriculture is identified as the leading source of pollution in these water bodies, with nutrients regarded as one of the leading contaminants.

Over the last decades, a number of Federal and state initiatives have been launched to address agricultural non-point source pollution – AEM, CREP, CAFOs are but a few of the programmatic acronyms associated with ongoing programs and regulations affecting the agricultural sector, a number of which we have discussed in previous years in this chapter. Due to recent initiatives at the Federal level, agriculturists and communities are likely to encounter two "new tricks" in the upcoming years: "TMDLs" and "water quality trading". We endeavor here to provide a brief introduction to these programmatic thrusts.

The 1972 Clean Water Act decreed a national objective of restoring and maintaining the integrity of the Nation's waters. The "fishable and swimmable" goals of this Act requires states to identify designated (best) use goals for each water body. According to the USEPA, the designated uses of a water body are those uses that society, through various units of government, determines should be attained in the water body. Associated with each designated use on each water body are water quality criteria that describe, among other things, the level of individual pollutants that, if met, will generally protect the designated use of the water.

If monitoring and assessment indicates that a particular segment of a water body is not meeting its designated use, it is said to be impaired. If it is further determined that the designated use cannot be achieved by implementing technologically-based controls on points sources affect the water body, then States are required to determine Total Maximum Daily Loads (TMDLs) for that water body. A TMDL is much like a pollution budget. It specifies the amount of pollutant a water body can receive (loading capacity) without causing impairment of the applicable water quality standard for any portion of that water body. By establishing this baseline relative to the status quo with corresponding wasteload allocations to point sources and load allocations for non-point sources, the TMDL defines the aggregate, location-specific amount of pollution reduction that must take place. In essence, under a TMDL program, the focus of managing water quality shifts from its traditional technology-based criteria of "How much should each source be allowed to emit?" to "How much should the total pollution load be allocated among various sources?" To assure that the load allocations are met, states may use incentive-based, non-regulatory or regulatory approaches.

While TMDLs have been required under the Clean Water Act since its passage since 1972, few have been developed until recently. Movement largely traces to litigation. A number of years ago, citizen groups and environmental organizations began bringing legal actions against the USEPA. According to the USEPA there have been about 40 such legal actions in 38 states, with the USEPA now under court order or consent decrees to ensure that TMDLs are established. To date, New York has not had a notable number of nutrient related TMDLs established. Yet, it should be noted that water bodies of the State may potentially be impacted by their link to downstream water bodies, such as the Susquehanna River (part of the Chesapeake Bay Basin), Lake Champlain, and the Passaic River, that are regulated by TMDLs. These linkages are further heightened by the Sepia's active encouragement to address water quality problems at the watershed level rather than focusing on specific impairments in specific water segments.

In announcing it Final Water Quality Trading Policy in 2003, the USEPA noted that implementing TMDLs Nationwide would be costly, and that finding solutions to "complex water quality problems requires innovative approaches." One of these innovative solutions involves water quality trading, which in October 2006 was brought to the agricultural environmental forefront with the signing of a Water Quality Credit Trading Agreement between the USDA and the EPA.

Water quality trading is what economists call a market-based approach to meeting environmental objectives. It works best when the different sources of emissions have large differences in abatement or control costs. As described in the announcement of the USDA/USEPA partnership agreement:

> "Water quality trading is an innovative approach to achieve water quality goals more efficiently. Trading is based on the fact that source in a watershed can face very different costs to control the same pollutant. Trading programs allow facilities facing higher pollution control costs to meet their regulatory obligations by purchasing environmentally equivalent (or superior) reductions form another source at lower cost, thus achieving the same water quality improvement at lower overall cost"

Extending credit trading to water quality finds its impetus in the fact that pollution trading programs have been successfully implemented in other environmental contexts, such as reducing acid rain pollutants from power plants. In such instances aggregate pollution reduction goals have been achieved earlier and at greater cost savings compared to more traditional regulatory approaches.

Should trading become a real alternative from meeting TMDL regulations it offers the possibility that establishing conservation practices on farms may shift from a prohibitive cost for farms to a revenue opportunity for some farms in the future. In the near term, however, it appears that efforts in this area will mostly be directed toward water quality credit trading pilot in the Chesapeake Bay Basin.

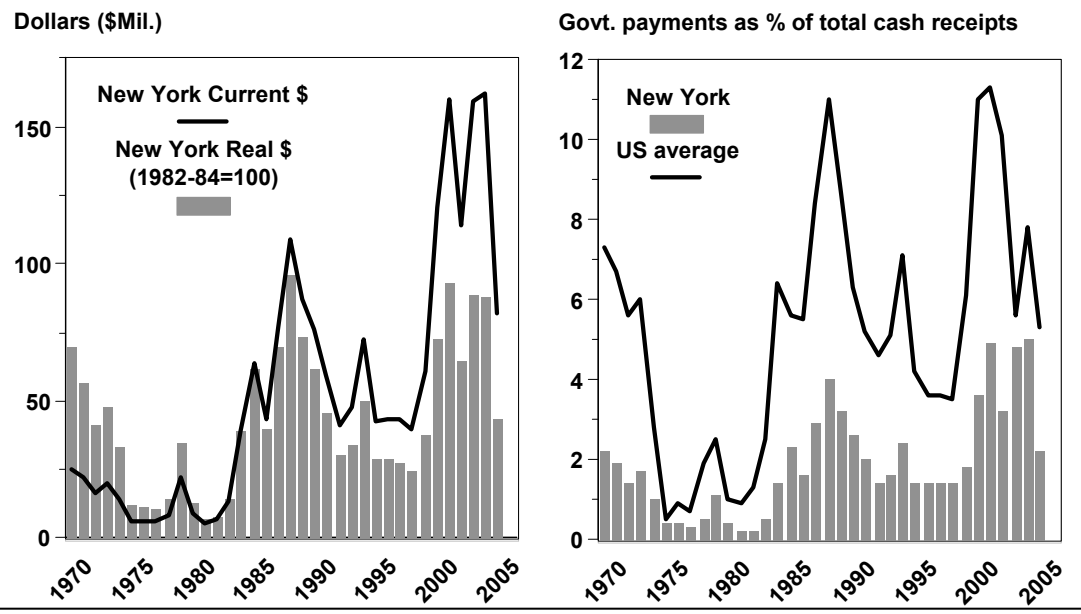
III. Still Looking Ahead--The 2007 Federal Farm Bill: What Do Farmers Think?

Efforts to by the USEPA to meet water quality objectives under the Clean Water Act have, with a few exceptions, been framed in a regulatory context. Working to achieve similar goals, policies under the periodically revisited Federal Farm Bill have encouraged conservation and environmental practices through voluntary programs, incentives, and education. Here we explore farmer's perceptions of these latter programs through the use of a nationally administered survey.

Before discussing some survey results, it is useful to have some understanding of the structure of Federal farm programs and the flow of funds to farmers and landowners from the Treasury. Too often such discussions are piecemeal and focus on only one or a handful of all programs the USDA has Congressional authority to operate. Historically, flows of Federal funds have not been particularly transparent with too little published data available for public scrutiny. These circumstances are materially better in recent years with improved access to USDA data files by the research and policy community. Today, internally consistent state-level data are published by two Federal agencies-the USDA and the US Department of Commerce-and the Environmental Working Group (EWG), a not-for-profit advocacy organization based in Washington, DC.

Drawing on these data, long-term trends in Federal support, using the metric of all direct cash payments to farm operators or farm landlords, for the New York farm sector are shown in Figure 11-4. The first panel expresses Federal payments since the late 1960s in both current dollar and real terms, using the Consumer Price Index (CPI) is a deflator. These data graphically illustrate the run-up in Federal support in the early 1980s. Congress stepped up Federal support in those years because the US farm sector as a whole was considered to be in a deep financial crisis. Federal support spiked again in the late 1990s and into this decade with the advent of renewed political support for Federal programs that provided a stronger safety net for growers of program crops, enlarged disaster assistance payments, and moderate increases in funding for conservation programs. After taking inflation into account however, Federal support in any single calendar year approached but did not usually surpass the flow of Federal dollars experienced in the mid to late 1980s.

FIGURE 11-4. FARM PROGRAM PAYMENTS, 1969-2004



The second panel in Figure 11-4 is of interest because it gives Federal support more context by comparing that flow of Federal funds with gross receipts gathered by farm operators from crop and livestock sales. Federal payments as a percent of total cash receipts for New York State peaked at 4% in the mid-1980s and hovered in the 5% range in the early 2000s. Because Federal funding is highly preferential, Federal support can and does vary dramatically from state to state depending on the structure of agriculture and the range of program choice available to landowners and farm operators. New York State is among a large collection of states-- many elsewhere in the Northeast-- that has historically received relatively small amounts of Federal funding. This relationship is amply demonstrated by comparing the US average level of Federal support and its ratio to total crop and livestock sales. That percentage reached the 11% mark on two occasions over the last half dozen five-year Farm Bill cycles. To illustrate the upper extreme, direct payments from Federal treasury amounted to about 35% of total farm receipts in North Dakota during calendar 1999.

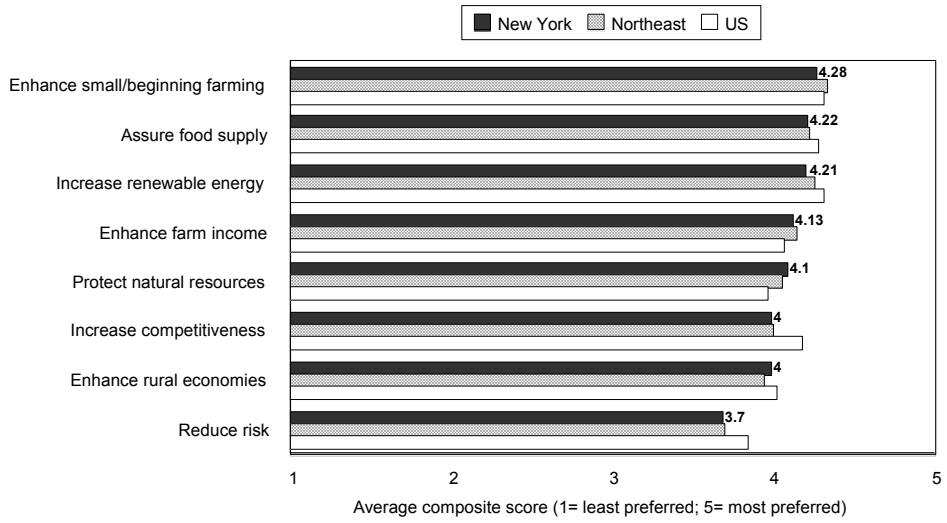
The New York Survey

Such dramatic differences in farming and exposure to Federal income support make for interesting comparisons and contrasts in farmer preferences for Federal farm policy. To examine those comparisons and contrasts, the Farm Foundation-- a not-for-profit organization and longtime supporter of farm policy discussions -- organized a national producer survey. In support of that effort, in November 2005, Cornell University and USDA's National Agricultural Statistics Service (NASS) contacted 2,900 farmers across New York State and solicited their views on preferred directions for the 2007 Farm Bill. Usable responses were obtained from 1,050 New York farmers. This survey was part of an effort nationally that collected data on farmer preferences in 27 states; the national results were reported in September 2006[2]. The discussion below highlights results reported in that recent report, emphasizing contrasts on conservation issues for the US, five Northeastern states participated in the survey effort (Maryland, New Jersey, New York, Pennsylvania, and Vermont), and producers/growers in New York State.

Producers were asked rank the importance of eight fundamental goals of the Farm Bill- see Figure 11-5. Seven of the goals are long-standing ideals mentioned in Farm Bill discussions over many years and decades. They include ideas related to farm income, risk, competitiveness, small and beginning farms, natural resources, rural economies, and the food supply. The eighth goal invokes agriculture's role in renewable energy. While not a goal of long standing, energy production from biomass—ethanol and biodiesel motor fuels are prime examples-- has become a major issue in recent years and even secured a separate title in the Farm Bill in 2002.

[2] Lubben, Bradley, Nelson Bills, James Johnson and James Novak. The 2007 Farm Bill: US Producer Preferences for Agricultural, Food, and Public Policy. National Public Policy Education Committee, Farm Foundation, Oak Brook, Illinois, September 2006 (Available at www.farmfoundation.com)

FIGURE 11-5. GOALS FOR THE 2007 FEDERAL FARM BILL



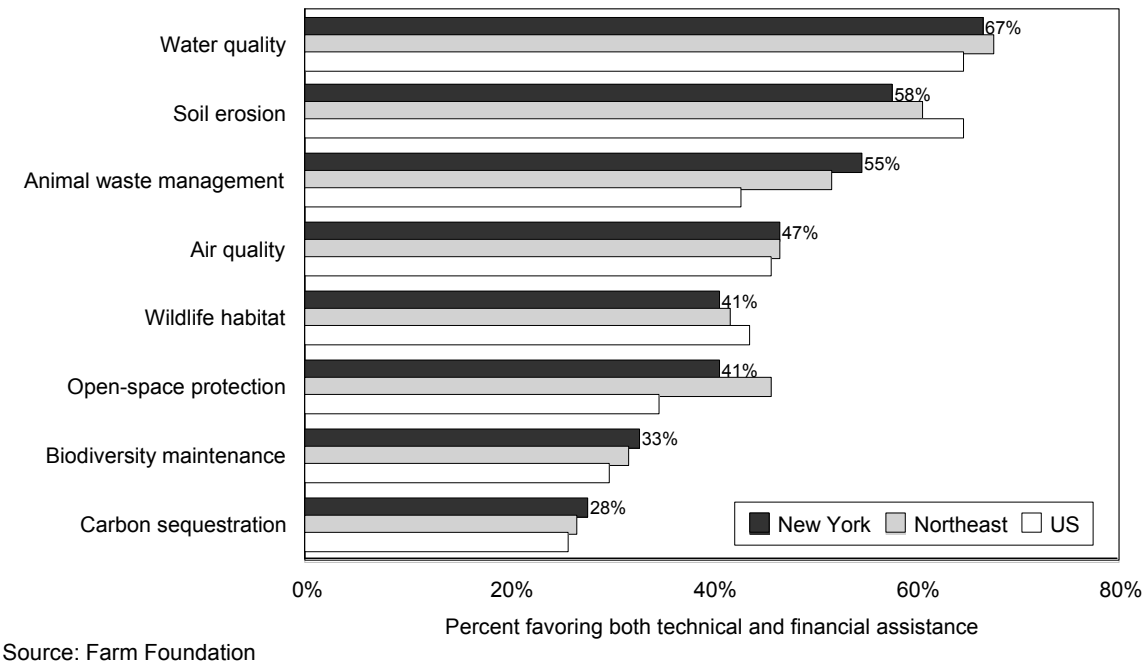
Source: Farm Foundation

Overall, the high rankings for these Farm Bill goals seem to project broad support for general societal benefits of farm legislation. At the nationwide level, producers rank renewable energy and enhanced small/beginning farm opportunities as the most important goals for farm legislation. The scores for both goals are significantly higher than all other goals; with the renewable energy goal scores slightly higher nationally. Rankings elicited from farmers in the Northeast and in New York State alone are not materially different from those observed at the national level. Interestingly, however, New York farmers ranked Federal support for small/beginning farm opportunities the highest compared to other goals. Producing a safe, secure, abundant, and affordable food supply also ranks highly among New York, regional and all national producers. At the other end of the scale, reducing price and income risk ranks lowest among the eight choices for goals for the Farm Bill by all three groups.

Views on Conservation and Environmental Policy

Federal support for improved conservation management on US farmland dates to the 1930s. Voluntary Federal programs provide both conservation assistance and financial incentives to producers. Greater attention has been given to water quality issues over the past two decades, and the survey results suggest that producers are uniformly in favor of continuing this Federal assistance with a sharp focus on water quality. Nationwide, 65 percent of producers prefer Federal technical and financial assistance; 67% of New York farmers fall in that category (see Figure 11-6). We conjecture that this high percentage in favor of funding reflects the fact that the primary benefits of such program accrue to the non-farm population. Soil erosion control, on the other hand, stresses maintenance of the farm operation's soil productivity and represents the nation's most persistent conservation problem. Excessive erosion often leads to reduced long-term soil productivity in addition to water quality impairments off-site. The survey results again suggest producers are heavily in favor of Federal assistance for this issue. In New York, 58% of all producers favor of technical and financial assistance for soil erosion control.

FIGURE 11-6. PREFERENCES FOR FEDERAL CONSERVATION PROGRAMS THAT FEATURE BOTH TECHNICAL AND FINANCIAL ASSISTANCE



Source: Farm Foundation

Not unexpectedly, because of the importance of the dairy industry, New York farmers are expressly concerned about management of animal waste. The survey shows that 55% of all New York farmers favor both technical and financial assistance to deal with animal waste issues on livestock farms. Producers apparently perceive air-quality issues, also closely tied to livestock and poultry production, to be on the horizon. Survey suggests that producers also favor Federal support in this area. For New York State, 47% of all producers fall in that category.

Federal programs encourage wildlife habitat protection and enhancement on farms. About four of every 10 New York farmers are in favor of both technical and financial assistance to achieve wildlife habitat goals. These preferences are about on par with those exhibited elsewhere in the Northeast and nationally.

Open space protection has constituted a major part of discussion of environmental issues and conservation priorities in New York State and throughout the Northeast. State/local farmland preservation efforts; began in the 1950s and, with the 1996 farm legislation, the Congress has provided for limited Federally-funded assistance programs. The survey results show that 41% of New York producers favor technical assistance and financial incentives for open space protection. That compares to 46% of all farmers surveyed in five Northeast states. Neighboring states surveyed-Maryland, New Jersey, Pennsylvania, and Vermont-are heavily involved in state-operated farmland protection programs. In contrast, the national support for priority rests around 30%, suggesting that support for this program priority varies regionally.

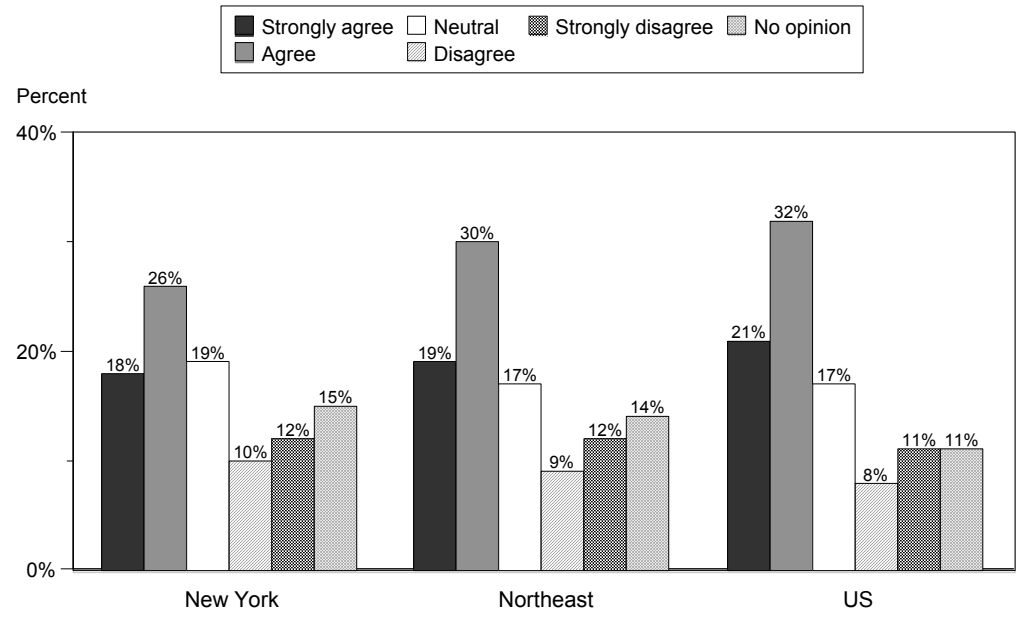
When this producer survey was designed, both carbon sequestration and concerns over maintenance of biodiversity were recognized as emergent environmental concerns for American agriculture. We asked producers to indicate their support for Federal funding in these areas. Nationally, and not unexpectedly, nearly 40 percent of producers responding to the survey answered “don’t know” to the question of technical or financial assistance for these issues. In New York, the percentage favoring Federal support was 33 and 26 percent, respectively for biodiversity maintenance and carbon sequestration. These results suggest that education to inform policy decisions is a challenge in this area.

Establishing Funding Priorities

Beyond support for meeting selected environmental milestones for agriculture, there is a very active debate on how to distribute funds for conservation programs across the country. In the survey, producers were asked their opinion on whether the Federal government should distribute conservation funds through block grants to the states, giving the states more authority to implement conservation programs. This approach would reduce dependence on "one size fits all" Federal conservation programs and give individual states more latitude on directing Federal funds to farms and to communities in greatest need.

The nationwide results show that a majority of producers are in agreement with the concept of Federal funding transferred as block grants to states for implementing conservation programs (Figure 11-7). A total of 53 percent of producers agreed or strongly agreed with the idea while only 19 percent disagreed or strongly disagreed (17 percent neutral and 11 percent no opinion/don't know). These preferences are generally consistent with those seen in the Northeast and in New York State. However, marginally fewer farmers in the Northeast appear to favor the use of block grants. It should be pointed out that responses to this question do not benefit from concise information on block grants might actually shift the allocation of Federal conservation funding across states and regions.

FIGURE 11-7. FEDERAL CONSERVATION FUNDING SHOULD USE STATE BLOCK GRANTS



Source: Farm Foundation

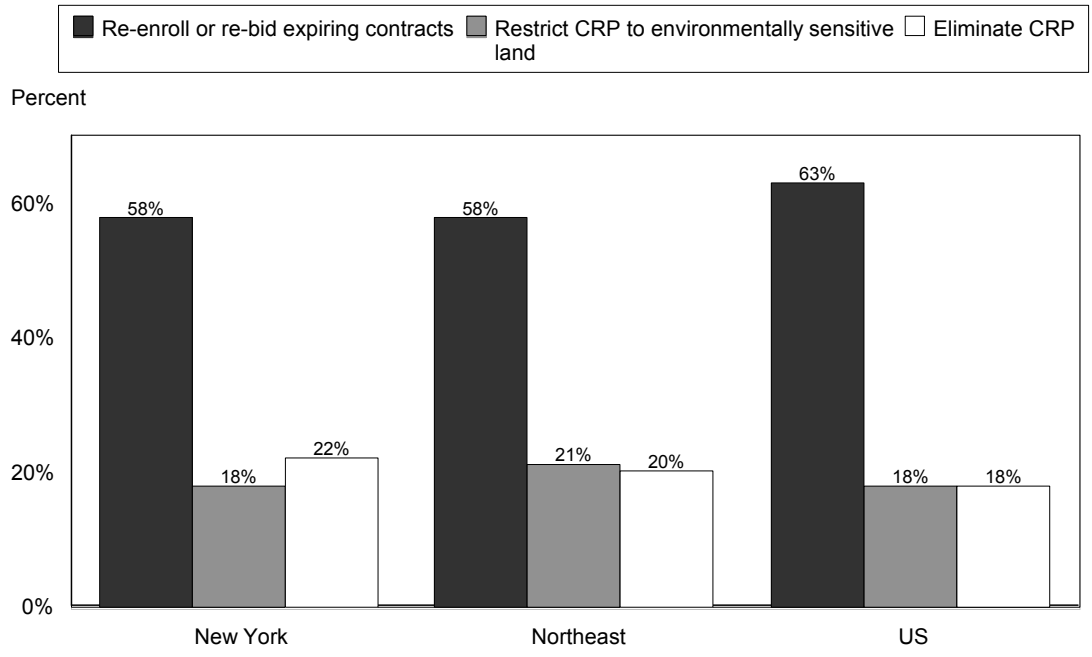
Managing High Profile Federal Conservation Programs

Another question focused on the future of the Conservation Reserve Program (CRP). The CRP currently has more than 35 million acres enrolled through various enrollments since its inception with the 1985 Farm Bill, including regular general bidding procedures, continuous sign-up provisions for high-priority lands and practices, and additional combination Federal, state, and private funded programs. The CRP is the flagship Federal conservation program because it constitutes the largest drawdown on Federal conservation funds. Enrollments in the Northeast have lagged behind those in other regions, with a majority of CRP acreage concentrated in the Corn Belt, the Great Plains, and the Intermountain West. A continuing issue for

the future of the CRP is fate of enrolled acreage when contracts expire. This issue is particularly acute now because a large majority of the currently-enrolled acres are in contracts which are scheduled to lapse within the next three years. In the spring of 2006, after the survey period was complete, the Secretary of Agriculture announced re-enrollment options for certain categories of lands currently enrolled in the program and short-term extensions of other categories of enrolled land. The re-enrollment and extension offer stretches out the large share of expirations, but at least 80 percent of the expiring acres will still be expiring in the next few years.

Producer's preferences regarding the future of the CRP are summarized in Figure 11-8. The largest group (63 percent) of producers nationwide favor maintaining the long-standing rules which allow contracts to expire and compete for re-enrollment or providing for automatic re-enrollment of existing contracts on land offering the highest environmental benefits. Only 36 percent of producers nationwide are looking to downsize the CRP by reducing and targeting future enrollments (18 percent) or by eliminating it as current contracts expire (18 percent). These results are amazingly consistent across regions of the country, even in areas where the CRP has not proven to be well-suited to conservation needs-- clearly the case throughout the northeastern US. Yet, the survey shows that farmers in New York State and elsewhere in the Northeast mostly fall into line on preferences for managing the CRP.

FIGURE 11-8. POLICY OPTIONS FOR THE CONSERVATION RESERVE PROGRAM (CRP)

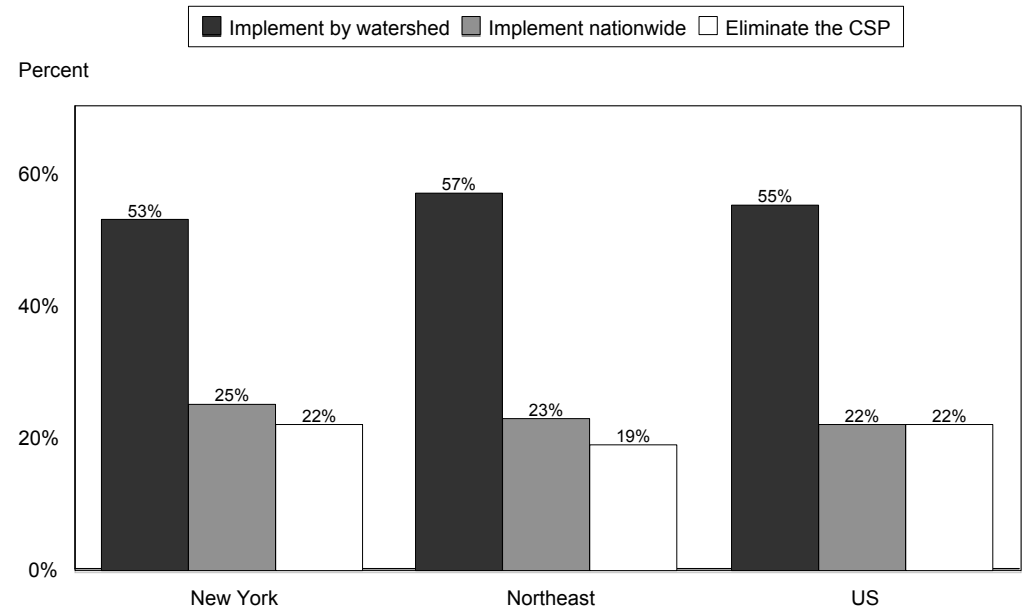


Source: Farm Foundation

Producers were asked about future options for the newer Conservation Security Program. The CSP was first authorized in the Farm Security and Rural Investment Act of 2002 and was first implemented in fiscal year 2004[3]. Currently, the CSP is being implemented on a pilot, watershed-by-watershed basis across the country. Through the first three years of implementation, the program has reached roughly 10 percent of the potential watersheds nationwide. In this environment, producers were asked their opinion on whether to continue implementing the Conservation Security Program on a watershed-by-watershed basis, to increase funding to implement the program nationally immediately, or to cut the program and eliminate existing contracts as they expire.

The results are shown in Figure 11-9. Adding up the support for the first two options, it is clear that producers overwhelming favor continued implementation of the CSP (77 percent total). However, it is interesting that over half of producers (55 percent) favored continuing the current implementation approach based on a watershed-by-watershed approach while just 22 percent favored increased funding for immediate nationwide implementation. These preferences are virtually identical in New York State and throughout the Northeast. One explanation might be a bias toward maintaining the status quo, which is the watershed-by-watershed approach, or there may be a concern over the budget cost of full, nationwide implementation and the resulting competition or tradeoff of dollars for other existing programs.

FIGURE 11-9. POLICY OPTIONS FOR THE CONSERVATION SECURITY PROGRAM (CSP)



Source: Farm Foundation

[3] This new USDA program is touted as "green payments" or financial incentives for agricultural producers to act as environmental stewards. CSP provides multiple layers of incentives and cost-sharing for farmers to undertake changes in on-farm conservation structures or management practices in order to enhance the environmental impacts of their agricultural operation. The program targets farm operators who already collaborate with USDA on conservation management. The voluntary program uses car sharing and payments organized under five- or ten-year contracts that focus on environmental issues such as improving water quality, reducing soil erosion, improving air quality, and addressing wildlife issues.

OTHER A.E.M. EXTENSION BULLETINS

EB No	Title	Fee (if applicable)	Author(s)
2006-19	Lake Erie Grape Farm Cost Survey, 2001-2005		Shaffer, B. and G. White
2006-18	Dairy Farm Business Summary, New York Dairy Farm Renters, 2005	($16.00)	Knoblauch, W. and L. Putnam
2006-17	Farm Family Transitions	($15.00)	Richards, S. and G. Conneman
2006-16	Estate Planning for Farm Families	($15.00)	Richards, S.
2006-15	Income Tax Management and Reporting For Small Businesses and Farms: 2006 Reference Manual for Regional Schools	($20.00)	Cuykendall, C., Bouchard, G. and J. Bennett
2006-14	Health Care Planning for Farm Families	($15.00)	Richards, S. and L. Shipman
2006-13	Dairy Farm Business Summary, Central Valleys Region, 2005	($12.00)	Knoblauch, W., Karszes, J., Radick, C., Allhusen, G. and L. Putnam
2006-12	Dairy Farm Business Summary, Northern New York Region, 2005	($12.00)	Knoblauch, W., Putnam, L., Karszes, J., Murray, P., Vokey, F., Ames, M., Van Loo, W., Deming, A., Tillinghast, C. and J. Viveiros
2006-11	Fruit Farm Business Summary, Lake Ontario Region, 2005		White, G., DeMarree, A. and J. Byma
2006-10	The Organic Decision: Transitioning Toward Organic Dairy Production	($15.00)	Richard S. and S. Bulkley
2006-09	Dairy Farm Business Summary, New York Small Herd Farms, 80 Cows or Fewer, 2005	($16.00)	Knoblauch, W., Putnam, L., Kiraly, M. and J. Karszes
2006-08	Dairy Farm Business Summary, Southeastern New York Region, 2005	($12.00)	Knoblauch, W., Putnam, L., Kiraly, M., Walsh, J., Hadcock, S. and L. Hulle
2006-07	Dairy Farm Business Summary, Intensive Grazing Farms, New York, 2005	($16.00)	Conneman, G., Grace, J., Karszes, J., Schuelke, J., Munsee, D., Putnam, L., Staehr, E. and J. Degni

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